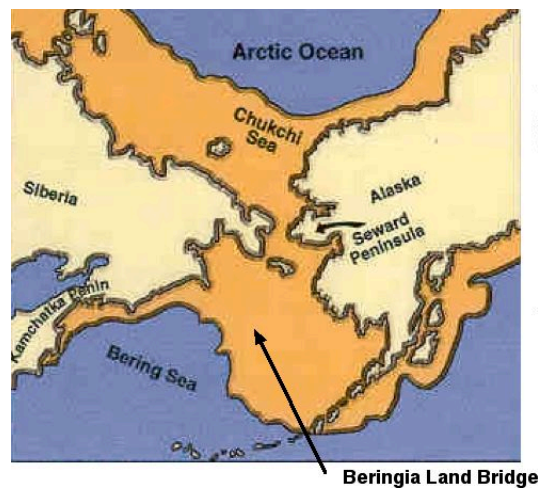
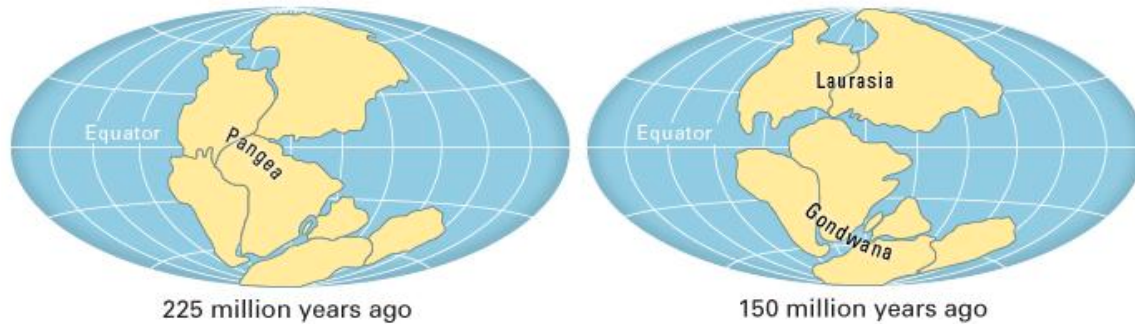


No, I am not referring to *Pangea* or *Laurasia* (the pre-continental drift continents), nor *Beringia* (the ancient “land bridge” that has been loosely defined as a region surrounding the Bering Strait, the Chukchi Sea, and the Bering Sea that includes parts of Chukotka and Kamchatka in Russia as well as Alaska in the United States).



What I am referring to is the nearly 300-year perception by Europeans that there were only three major continents: Europe, Africa and Asia. The following discussion reflects excerpts from primarily two books: volume four of my four-volume *Cartographic Monographs: Renaissance Maps 1470-1700* (2015) and Eviatar Zerubavel from his 2003 book *Terra Cognita, the Mental Discovery of America*.

As the great historian Henry R. Wagner states: No sooner had the New World been discovered than the question was asked: Was it part of Asia or a new land? At first some thought it to be one of the Indian peninsulas, but the entire dissimilarity of the country and its inhabitants from what was known of India soon led to the opinion that it must descend from some part of China. A school of cosmographers arose which thought that north of the discovered regions some part of China would be found, notably *Cathay*, the rich country of Marco Polo. First of the three maplets, or map sketches, attributed to Alessandro Zorzi/Bartholomew Columbus (#304) are perhaps the earliest published to display this theory. The initial impetus that led to the 15<sup>th</sup>/16<sup>th</sup> century European Age of Exploration and Discovery was their desire to find an efficient way to reach the treasures of the Orient described by Marco Polo and others in the 13<sup>th</sup> century. While there was an on-again/off-again trade between Europe and the Far East for centuries through a long and arduous land route (controlled by the Mongols and/or Arab middle men) and the Portuguese in the 15<sup>th</sup> century were beginning their exclusive exploration of a sea route



around Africa, the rest of Europe looked for ways to compete for these treasures. But the impetus to find alternate routes to these treasures actually begins with the ancient Greek geographers and carried forward in the 13<sup>th</sup> century by Roger Bacon and Albertus Magnus, in the 14<sup>th</sup> century by Paolo Toscanelli and Pierre d'Ailly, in the 15<sup>th</sup> century by Martin Behaim, Henricus Martellus and the *Laon* globe and finally executed by initially Christopher Columbus in 1492.

**Setting the Stage.** In the fourth century B.C., Greek philosopher Aristotle denied the existence of a landmass separating the extreme east from the remote west. In his view, both ends of the *oikoumene* [known inhabited world] were connected by an unbroken body of water of relatively small range. He confirmed this assumption by the fact that elephants dwelled both in India and in Africa imparting to them remarkable swimming abilities-presumably over short sea stretches-or suggesting a crossing of an unknown land bridge, "there is continuity between the parts about the pillars of Hercules and the parts about India... in this way the ocean is one. As further evidence in favor of this ... the case of elephants, a species occurring in each of these extreme regions, suggesting that the common characteristic of these extremes is explained by their continuity".

For Eratosthenes (*see monograph #112*), the width of the *Ocean Sea* was close to two thirds of the circumference; the great value of the water barrier (less than 122,000 *stades* or 14,024 miles) put a dilemma before a famous scientist which he was unable to solve: either to deny the possibility of the Atlantic crossing: "*if the extent of the Atlantic Ocean were not an obstacle, we might easily pass by sea from Iberia to India, still keeping in the same parallel*" or to recognize the existence of more than one *oikoumene* in the northern temperate zone there may be two or even more habitable earths, especially near the circle of latitude which is drawn through Athens and the Atlantic Ocean.

In Posidonius' view (*#114*), the uncharted waters occupied the same length as the inhabited world: both measured 70,000 *stades* (43,495 miles). He is certain that the west and the east occupy the opposing shores of the same ocean and ponders about the possibility of such a long voyage: "*starting from the west, one might, aided by a continual east wind, reach India.*"

Strabo, first century A.D. (*#115*) claimed that circumnavigation was possible. He confirmed that nobody had accomplished this tremendous task yet not because of a natural obstacle such as a new continent but due to the lack of provisions and spirit: "*Those who have returned from an attempt to circumnavigate the earth, do not say they have been prevented from continuing their voyage by any opposing continent... but through want of resolution and the scarcity of provision.*"

Seneca in his treatise *Natural Questions* agreed with those who claimed that the ocean should be relatively narrow. He assumed that a well-built ship sailing under fair wind could pass over this water body in a number of days: "*For what after all is the space that lies from India to the farthest shores of Spain? A few days journey if a prosperous wind waft the vessel.*"

The idea of the world ocean also matched the Biblical description of the earth's birthday: "*And God said, 'Let the water under the sky be gathered to one place, and let dry ground appear.'*" And it was so."

This concept became available to Europe in the west in a printed Latin translation of Strabo's *Geography* in 1469, at exactly the same time as Claudius Ptolemy's maps (*#119*). Unlike the geography of the ecclesiastical *mappa mundi* or of the Mediterranean *portolan* sea-charts, Ptolemy's measured world had an unmistakably spherical form. The known, inhabited world occupied slightly more than half of the globe, just over 180 longitude degrees. Ptolemy's approach to geography was strictly scientific and impersonal. He was interested in the earth, all of it, not just the habitable part, and tried to fit it into a scheme of the universe where it belonged. More than any one of the ancients, Ptolemy succeeded in establishing the elements and form of scientific cartography. This he did through his second great treatise, *Geographike Syntaxis*, called by him, "the geographical guide to the making of maps", and, in later centuries, shortened to simply *Geographia*, or (incorrectly) *Cosmographia*. This work is actually the first general atlas of the

world to have survived, rather than a “geography” with a long textual introduction to the subject of cartography (see #119).

Overall Ptolemy’s world-picture extended northward from the equator a distance of 31,500 *stades* [one mile = 9 to 10 *stades*; there has always been some controversy over the equivalent modern length of a *stade*] to 63° N at Thule, and southward to a part of Ethiopia named *Agysimba* and Cape *Prasum* at 16° S latitude, or the same distance south as Meroe was north. The “breadth” of the habitable world according to Ptolemy then equates to 39,500 *stades* [3,950 miles]. It is remarkable that, while his map is consistently mentioned as reflecting the entire inhabited portion of the globe, there is no indication on any of his world maps of habitation south of *Agysimba*, though there is some hint of his belief/knowledge to the contrary in his criticism of Marinus on this point.

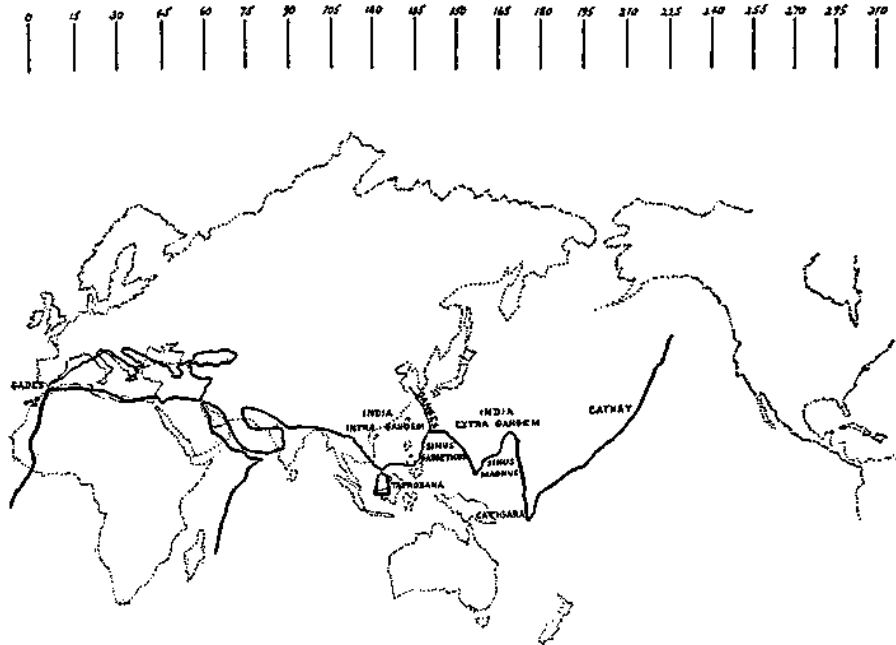
Ptolemy believed in the sphericity of the earth. Marinus estimated that the length of the known habitable world, i.e. the distance between the *Fortunate Islands* [Canary-Madeira Island group] in the west, and *Cattigara* [Borneo?] in the east, to be a distance of 15 hours of longitude, 230° (11,250 miles) at the equator. Ptolemy “corrected” this length to 180° (9,000 miles), still 50° (2,500 miles) too long, an error arising from using the *Fortunate Islands* as his prime meridian which he placed about seven degrees (350 miles) too far to the east. Contributing to this mistake was Ptolemy’s (and Marinus’) rejection of the surprisingly accurate calculation of the circumference of the earth, made by Eratosthenes (276 -196 B.C.) of 252,000 *stadia* [25-28,000 miles]. Instead Ptolemy/Marinus adopted the figure derived by Posidonius (135 - 50 B.C.) of 180,000 *stadia* [~18,000 miles] and applied it to the distance measurements available to him, concluding that Europe and Asia extended over one-half of the globe; in reality they cover only 130°. Similarly he showed the length of the Mediterranean as 62°, whereas, in reality it is only 42°. The eastward extension of Asia is also exaggerated, measuring about 110° from the coast of Syria to the outermost limits of China, instead of the true distance of about 85°.

It is not known whether any actual maps were included in Ptolemy’s *Geographia* during his lifetime (c.90–c.170 ad). If there were, not one has survived. The specimens commonly referred to as his maps were actually made by others, centuries later, based on the coordinates and identifications noted in his *Geographia*, which had been copied, and undoubtedly sometimes miscopied, over the centuries. His world map depicted the Indian Ocean as a vast inland sea by joining the east coast of Africa about 16.5° S to a southward extension of China named *SINARVM SITVS* (the place of the Chinese), with the port city of *Cattigara* located at 8.5° S, to form a hypothetical *TERRA INCOGNITA*. The identity of *Cattigara* was for centuries a mystery, as its astonishingly varying locations on 16<sup>th</sup> century maps demonstrate. It was only in the twentieth century that researchers finally established that, by *SINVS MAGNVS* (the Great Gulf), east of *AVREA CHERSONESVS* (the Malay Peninsula), Ptolemy had quite logically meant the gulf immediately east of the latter, today known as the Gulf of Siam (Thailand) instead of anywhere else. Some scholars have even suggested that it was the Pacific Ocean.

The geographical errors made by Ptolemy in his text and maps constitute the principle topic of many scholarly dissertations. Yet most of his errors arose from nothing more than a dearth of information. He lacked enough reliable facts. The whole world lacked the fundamental data necessary to compile an accurate map. The only good reason for discussing a few of the glaring faults of the *Geographia* is that it was the canonical work on the subject for more than 1400 years. Geographers of the 15<sup>th</sup> and 16<sup>th</sup> centuries relied on it so heavily, while ignoring the new discoveries of maritime explorers, that it actually exerted a powerful retarding influence on the progress of cartography. The *Geographia* was both a keystone and a millstone, a pioneering effort that outlived its usefulness. His hypothetical map was excellent but his world of reality was faulty.

Paradoxically, Ptolemy’s eastward extension of Asia, reducing the length of the unknown part of the world, coupled with his estimate of the circumference of the earth, was his greatest contribution to history if not cartography. During the ancient period the estimated circumference of the earth was only 18,000 miles around at the equator; Poseidonius had stated it, Strabo substantiated it, and Ptolemy perpetuated it on his maps. This “shorter distance” that a mariner

would have to travel west from the shores of Spain in order to reach the rich trading centers of Asia may have contributed to Columbus' belief, or that of his royal sponsors, that they could compete with their rival neighbors, Portugal, in the newly opened sea-trade with India by sailing west. While Ptolemy's map is based upon the theory that the earth is round, it bares repeating that it is to his credit that he depicts only that half of its surface which was then known, with very little attempt to speculate on or "fill-in" the unknown parts with his imagination.



Ptolemy's view of the world superimposed over a Mercator projection of the known world of today

The following rather prophetic quotation is from the famous early medieval philosopher Isidore of Seville in his *Etymologies*, circa A.D. 600 (see monograph #205)

*The earth is placed in the central region of the cosmos, standing fast in the center, equidistant from all other parts of the sky .... It is divided into three parts, one of which is called Asia, the second Europe, the third Africa .... Apart from these three parts of the world there exists a fourth part, beyond the ocean, which is unknown to us.*

Ptolemy's theories and estimates of the size of the inhabited world were expounded upon by Cardinal Pierre d'Ailly in the early 15<sup>th</sup> century (#238). A French prelate and cardinal, celebrated for his learning, Pierre d'Ailly had great influence on the theological controversies of the late 14<sup>th</sup>, early 15<sup>th</sup> centuries, especially during the Council at Constance. The cosmographical writings of this Archbishop of Cambrai were immensely popular during the 15<sup>th</sup> century. The most important and influential treatise, called *Tractatus de Imagine Mundi*, is the first one in the published volume. It was written in 1410 when d'Ailly knew the astronomical work of Ptolemy through his *Almagest*, but had not yet read his other work, *Geographia*, which was being translated into Latin for the first time by Jacobus Angelus almost concurrently with d'Ailly's production of his twelve treatises.

Probably the most significant passages of d'Ailly's writings are those in which he discusses the extent of the habitable globe. Some extracts from these will provide some insight to his ideas of cosmogony (from the seventh chapter of his *Ymago Mundi*):

The earth is spherical and the Western ocean is relatively small. Aristotle pretends, contrary to Ptolemy, that more than a quarter of the whole globe is inhabited, and Averroes sustains the same opinion. The Stagyrte affirms also



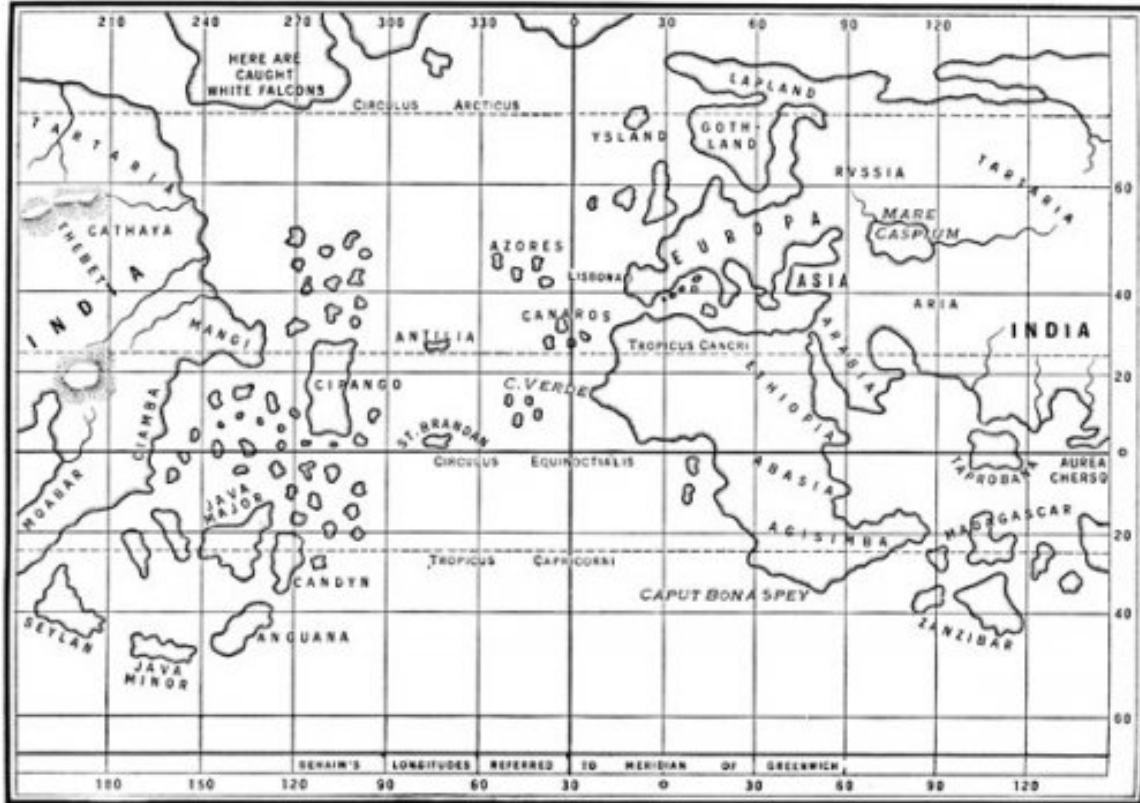
that the extent of sea is small between the coast of Spain in the West and the shores of India in the East. We are not concerned here with the actual Spain, but with the *Further Spain*, which is Africa. Seneca asserts that one can traverse that sea in a few days if the wind is favorable. Again, Pliny teaches us that ships from the Gulf of Arabia can arrive in a short time at Gades in the South of Spain. Whence we conclude that the sea is not big enough to cover three-quarters of the globe. Esdras affirms in his fourth book that six parts of the earth are habitable and inhabited and that the seventh part alone is covered by the waters. The authority of that work has been recognized by the saints, who have made use of it for confirming the sacred verities. Beyond Thule, the last island of the Ocean, after one day's sail the sea is frozen and stiff. At the Poles there live great ghosts and ferocious beasts, the enemies of man. Water abounds there, because those places are cold, and cold multiplies humors [or vapors].

In the forty-ninth chapter he uses another argument that he had borrowed from Aristotle: "*The west coast of Africa cannot be far removed from the east coast of India, for in both those countries elephants are found.*"

Now the greatest interest of these and similar extracts from d'Ailly is that they were of fundamental importance in governing the ideas of the last of the medieval travelers, Christopher Columbus. However uncertain the premises and unsound the conclusions may appear to a modern reader, they were seized on by Columbus and his contemporaries and stimulated exploration to the west and south. It has now been proved that practically the only books on cosmogony that were familiar to Columbus were two, the *Ymago Mundi* of d'Ailly, an edition published between 1480 and 1487, and the *Historia rerum ubique gestarum* of Aeneas Silvius (Pope Pius II), published at Venice in 1477. There are still preserved in the Library of the Colombine at Seville the original copies of these books that were used by Christopher and his brother Bartholomew, and their margins are filled from end to end with remarks and notes in their own hands.

After his three historic voyages westward, Columbus in 1498, in letters to his sovereigns, attempting to substantiate his claims of discovering a new route to the Indies, proved that he was a man whose philosophical foundation lay firmly in the Middle Ages. Not a discriminating scholar, Columbus took his arguments ready-made from old fashioned, handy compendia, but assumed an appearance of immense erudition by quoting passage after passage from classical authors, both Greek and Latin, to prove that the islands and mainland he had discovered are part of Asia. He refers incidentally to d'Ailly as an authority supporting his view, but he does not reveal the fact that almost every scrap of his classical learning is lifted bodily out of the Cardinal's pages. This style of research produced two of Columbus' major errors. One was underestimating the unknown waters to the west of Europe because he adopted Marinus of Tyre's concept of the world through d'Ailly's work; the other error Columbus' acceptance of Ptolemy's calculation of distance around the world and, of course the size of a degree of longitude. Thus, according to authorities such as Humboldt, Newton, and Vignaud, Columbus in 1498 cribbed his views from d'Ailly who wrote in 1410, d'Ailly cribbed from Roger Bacon whose work dates from 1267, Roger Bacon derives through the Arabs from the Greeks. The most famous of the explorers of the new age, in fact, drew none of his ideas directly from the newly recovered geographical literature of the Greeks as did the true Renaissance thinkers like Peter Martyr or Damian Goes. Therefore, according to some scholars, his discovery of a "new world" was accomplished not with Greek or modern geographical concepts but with medieval concepts. In a passage made famous by its association with the name Columbus, d'Ailly demonstrates that the length of the habitable earth is greater than that postulated by Ptolemy and points out, as a corollary, that the commencement of India in the East could not be very far distant from the western extremity of Africa. From this same passage we learn that d'Ailly favors the concept of an open, rather than an enclosed Indian Ocean, and, in consequence, a sea-girt Africa, although this is nowhere stated categorically.

Roger Bacon and Albertus Magnus put forward similar views in the 13<sup>th</sup> century. In the 1470's, Paolo Toscanelli (1397-1482), the Florentine physician and cosmographer, was the earliest known medieval supporter of a westward voyage from Europe to the Far East to portray his theories cartographically (#252). He contended that the Far East could be reached more directly by sailing west than by rounding the Cape of Good Hope and crossing the Indian Ocean. Toscanelli accepted Marco Polo's earliest claim of the elongated Asian continent.



One of Toscanelli's friends was Fernan Martinez de Roriz, a Portuguese canon who later became King Alfonso's confessor at the Court in Lisbon. It is probable that some time about the beginning of the 1470's, the canon had come to discuss geographical questions with the King, or with Crown Prince João, who was more interested in geography, and then happened to mention Toscanelli's theory about a passage to India across the ocean to the west. At that time the Portuguese believed that they had already reached the southern extremity of Africa, and that the way to the riches of India already lay open before them. But then came the disconcerting news that once past the Cameroons the coast again turned south and continued to do so for mile upon mile; it seems almost as if all hope of ever being able to circumnavigate Africa was abandoned. It was in this situation that the King instructed his confessor to write to Toscanelli and ask him to explain his plans more clearly. Toscanelli answered at some length, enclosing a map of the sea that divided Europe from Asia. The following is a translation of this most important document in its entirety:

To Fernam Martins, Canon of Lisbon, Paulus the Physician [i.e. Toscanelli] sends greetings.

It pleased me to hear of your intimacy and friendship with your great and powerful King. Often before have I spoken of a sea route from here to India, the land of spices; a route that is shorter than that via Guinea. You tell me that His Highness wishes me to explain this in greater detail so that it will be easier to understand and to take this route. Although I could show this on a globe

representing the earth, I have decided to do it more simply and clearly by demonstrating the way on a nautical chart. I therefore send His Majesty a chart drawn by my own hand, on which I have indicated the western coastline from Ireland in the north to the end of Guinea, and the islands that lie along this path. Opposite them, directly to the west, I have indicated the beginning of India, together with the islands and places you will come to; how far you should keep from the Arctic Pole and the Equator; and how many leagues you must cover before you come to these places, which are most rich in all kinds of spices, gems and precious stones. And be not amazed when I say that spices grow in lands to the west, even though we usually say the east; for he who sails west will always find these lands in the west, and he who travels east by land will always find the same lands in the east.

The upright lines on this chart show the distance from east to west, whereas the cross lines show the distance from north to south. The chart also indicates various places in India that may be reached if one meets with a storm or head-wind, or any other misfortune.

That you may know as much about these places as possible, you should know that the only people living on any of these islands are merchants who trade there.

There are said to be as many ships, mariners and goods there as in the rest of the world put together. Especially in the principal port called *Zaiton* [Marco Polo's *Zaitum*] where they load and unload a hundred great ships of pepper every year, not to mention many other ships with other spices. That country has many inhabitants, provinces, kingdoms and innumerable cities, all of which are ruled by a prince known as the Grand Khan, which in our language means 'The King of Kings', who mainly resides in the province of *Cathay*. His forefathers greatly desired to make contact with the Christian world, and some two hundred years ago they sent ambassadors to the Pope, asking him to send them many learned men who could instruct them in our faith; but these ambassadors met with difficulties on the way, and had to turn back without reaching Rome. In the days of Pope Eugenius, there came an ambassador to him, who told him of their great feelings of friendship for the Christians, and I had a long conversation with the ambassador about many things: about the vast size of the royal buildings, about the amazing length and breadth of their rivers, and about the great number of cities on their banks - so great a number that along one river there were two hundred cities with very long, wide bridges of marble which were adorned with many pillars. This country is richer than any other yet discovered, and not only could it provide great profit and many valuable things, but also possesses gold and silver and precious stones and all kinds of spices in large quantities - things that do not reach our countries at present. And there are also many scholars, philosophers, astronomers and other men skilled in the natural sciences who govern that great kingdom and conduct its wars.

From the city of Lisbon to the west, the chart shows twenty-six sections, of two hundred and fifty miles each - altogether, nearly one-third of the earth's circumference before reaching the very large and magnificent city of *Kinsai*. This city is approximately one hundred miles in circumference, possesses ten marble bridges, and its name means 'The Heavenly City' in our language. Amazing things have been related about its vast buildings, its artistic treasures and its revenues. It lies in the province of *Manji*, near the province of *Cathay*, where the king chiefly resides. And from the island of *Antillia*, which you call the *Island of the Seven Cities*, to the very famous island of *Cipangu* are ten sections, that is 2,500 miles. That island is very rich in gold, pearls and precious stones, and its temples and palaces are covered in gold. But since the route to this place is not yet



known, all these things remain hidden and secret; and yet one may go there in great safety.

I could still tell of 'many other things, but as I have already told you of them in person, and as you are a man of good judgment, I will dilate no further on the subject. I have tried to answer your questions as well as the lack of time and my work have permitted me, but I am always prepared to serve His Highness and answer his questions at greater length should he so wish.

*Written in Florence on the 25<sup>th</sup> of June. 1474.*

It is clear that Toscanelli obtained most of his information about "Furthest India" from Marco Polo's book, but he also mentions that an "ambassador" visited Pope Eugenius. Poggio Bracciolini, the Papal Secretary who wrote about Nicolo Conti's travels in India, adds at the end of Conti's narrative: *"There came a man from the northern parts of Upper India to the Pope, wishing, on the instructions of his Nestorian Patriarch, to learn of the Christians in the countries of the West. He told of the Grand Khan and of his dominion over nine powerful peoples."* This man was probably the ambassador mentioned by Toscanelli, and we shall have to presume that Conti and other travelers who are unknown to us today gave Toscanelli further valuable information. Toscanelli probably based his very exaggerated idea of the size of the world on what Marinus of Tyre had said; this was later to have some very remarkable consequences, for Christopher Columbus corresponded with Toscanelli during this time. He sent Columbus an encouraging reply along with a copy of a letter and map that he had prepared at the request of Afonso, King of Portugal, outlining his ideas. The map by Toscanelli depicted the intervening ocean which Pierre d'Ailly described in his *Imago Mundi* as *"the sea is little between the farthest bound of Spain from the east and the nearest of India from the west"* and that *"this sea is navigable in a few days if the wind is favorable"*. Toscanelli sent the letter and maps (or charts) to the King of Portugal in 1474 and to Columbus before 1481. These documents deeply affected the course of Columbus' life and the history of the world. Although copies of Toscanelli's letter has survived, his historic map was lost; but the map can be reconstructed from the text of his letter and from two surviving cartographic works embodying his ideas. These are the 1490 world map of Henricus Martellus and the 1492 Nuremberg globe of Martin Behaim, the only two extant non-Ptolemaic world maps of the 15<sup>th</sup> century to be graduated in latitude and longitude and so to convey a precise estimate of the width of the ocean between westernmost Europe and easternmost Asia.

Whether Columbus ever saw any printed or manuscript account of Polo's narrative before 1485 or 1487, at the latest, is uncertain, but it can be readily ascertained from his log of the first voyage that he had seen the letter written by Paolo Toscanelli.

The original of Toscanelli's letter is no longer in existence so far as known, and the only contemporary evidence that it existed is found in a volume in the Colombina in Seville that had belonged to Columbus. At the end of this volume on two leaves the letter in Latin, dated June 25, 1474, is copied together with a letter from Toscanelli to Columbus. This copy, according to Columbus, was a copy of the one that had been sent to Martins and which had been sent to Columbus himself at some later date, unknown because this second letter of Toscanelli is not dated. It might appear from the contents of it, however, that Toscanelli believed that Columbus was still in Portugal, and indeed he may have been there, but I think it was much more likely that the letter did not reach Columbus until he had gone to Spain. As mentioned above, the original letter to Martins, or the copy of it rather, is nothing but



an abstract from some text of Polo's narrative, either manuscript or printed. Besides Toscanelli's extract from Polo's narrative he included in the letter some calculations on the method of reaching *Cathay* and *Cipangu* [Japan] by sailing to the west. The letter is somewhat ambiguous but with the letter to Columbus he sent a map on a plane projection and Columbus speaks of it several times in his log. In his letter Toscanelli says that the map is divided into spaces that could only have been five degrees square. Again, as mentioned above, there were twenty-six such spaces from Lisbon to *Quinsai*, he said of 250 miles each, that is 6,500 *Italian miles*, or about 5,000 *Spanish miles*. From the island of *Antil* [that is *Antilla*] a purely legendary island, Toscanelli says it is 2,500 miles to *Cipangu*. On that basis it would have been about 4,000 miles from Lisbon to *Antil*. Toscanelli, however, neglected to state how far it was from the mainland to *Cipangu* and this omission cut a great figure later in Columbus' bewilderment when he finally reached the West Indies. When Columbus finally found what he called *Cipangu*, he did not know where the mainland lay because Toscanelli had neglected to state it. Toscanelli's figures amounted to about 130° longitude difference between Lisbon and *Quinsai*, whereas the actual difference is about 220°. He probably figured his 50 miles to the degree on the parallel of about 40° which passes close to Lisbon. As he advised sailing a little south of west he evidently considered *Quinsai* to lie in a lower latitude, which as a matter of fact, is the case. It is the modern Hangchow and is something like 12,000 miles from Lisbon by sailing west. If Columbus had known that the distance was so great he would never have started for it. As it was when he had sailed some 3,000 miles or more he gave up the search, largely I imagine because the crew refused to sail any farther from land.

To Toscanelli the goal was Marco Polo's *Cathay*, and within the intervening ocean he was aware of no considerable land other than the two large islands of *Antillia* and *Cipangu* [Japan]. The former is only on the *Martellus* map of 1490 (#256), while both islands are shown on the *Behaim* globe of 1492 (#258). The scholar G.R. Crone suggests that the belief that the East could be reached by sailing West was being reconsidered in geographical circles before the second half of the 15<sup>th</sup> century, possibly in the 14<sup>th</sup>.

Taking his departure from a port of the Iberian Peninsula and sailing down into the zone of the northeasterly trade winds, according to Toscanelli a navigator could then lay a course west or southwest on which he would find *Antillia* lying across his bows. These were in fact the courses set by Columbus in the late summer of 1492, and *Antillia* was the first land which he expected to sight on his westward passage from the Canaries, based upon the Toscanelli's reference in his letter to Columbus to "*the island of Antillia which is known to you*", in the latitude of *Cipangu*. A mapmaker who thought in terms of a globe could locate *Antillia* somewhat further west than might be suggested by an ungraduated *mappamundi* or *portolan* chart in which it was drawn at the left-hand edge of the parchment. Toscanelli (as he told Columbus) supposed *Antillia* to lie 35 degrees west of his prime meridian through the Canaries; and it is in just this longitude, a little north of the equator, that Martin Behaim lays down, in his globe of 1492, the *Island of St. Brendan*, with an outline very like that of *Antillia* in the 15<sup>th</sup> century charts and in the *Vinland* map. Behaim gives it the name *Insula de sant brandan*. This apparent association of *Antillia* and *St. Brendan* in Behaim's mind echoes that in the *Vinland* map (#243). We must note, however, that the globe also shows *Antillia*, as a triangular island lying on the Tropic of Cancer (thus nearly due west of the Canaries) and about 10 degrees east of his *St. Brendan's Island*. This concept is not, in substance, different from that expressed in the relevant part of the *Vinland* map and there copied from a model similar to the *Bianco* world map of 1436 (#241) in which the design is compressed within the limits of the available space at the extreme left of the vellum sheet. Columbus made copious notes on all reports of land or islands in the west that came to his notice, and those were gathered together in the biography by his son Fernando. All the evidence that he could collect indicated that both his objective and the best route thither lay in tropical latitudes. Like Toscanelli, he took *Antillia* to lie on or near the Tropic of Cancer; and if (as we suppose) the world maps he consulted included ones like those by Henricus Martellus in 1489 and 1490 (#256), which reflects Toscanelli's views, he could see that a course along the same parallel would bring him to *Cipangu* and to *Mangi*, the "cape of Asia". Toscanelli allowed 85 degrees of longitude between

the Canaries and *Cipangu*, Martellus indicated 90 degrees and Behaim showed 110 degrees on his globe (#258).

Toscanelli, when writing his famous letter in 1474, refers to a globe as being the best adapted for demonstrating the erroneous hypothesis as to the small distance which he supposed to separate the west of Europe from eastern Asia. Columbus, too, had a globe on board his vessel upon which was depicted *Zipangu* [Japan], and which may have been the work of his brother Bartholomew, who, according to Las Casas, produced charts as well as globes. But only two globes of a date anterior to the discovery of the New World have survived, namely this one in Nuremberg, and a smaller one at the *Depôt des planches et cartes de la marine*, Paris, the *Laon Globe*.

A third player in this drama is Martin Behaim. It was Martin Behaim of Nuremberg (1459-1507), who, in so far as we have knowledge, constructed one of the first modern terrestrial globes, and it may, indeed, be said of his "*Erdapfel*," as he called it, that it is the oldest terrestrial globe extant (#258). Globes in his age, and even earlier, were by no means unknown. The following legend, which is inscribed in German on the globe, gives the history of this important geographical monument:

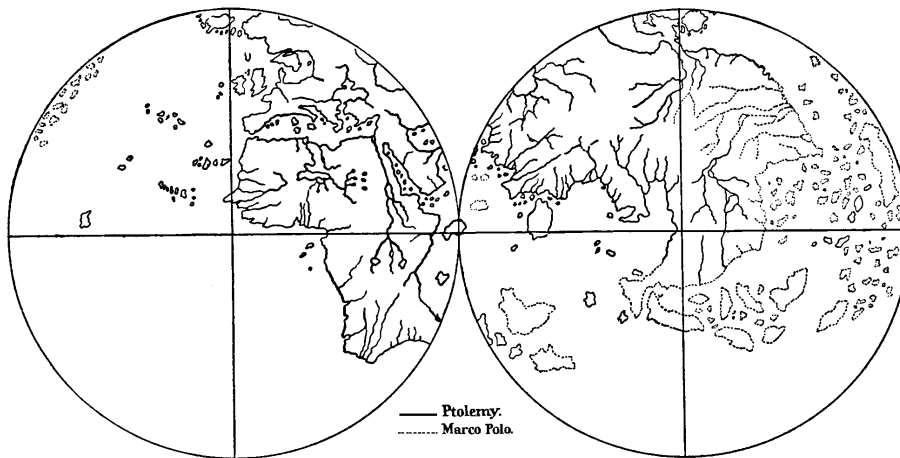
At the request of the wise and venerable magistrates of the noble imperial city of Nuremberg, who govern it at present, namely, Gabriel Nutzel, P. Volkhamer, and Nicholas Groland, this globe was devised and executed according to the discoveries and indications of the Knight Martin Behaim, who is well versed in the art of cosmography, and has navigated around one-third of the earth. The whole was borrowed with great care from the works of Ptolemy, Pliny, Strabo, and Marco Polo, and brought together, both lands and seas, according to their configuration and position, in conformity with the order given by the aforesaid magistrates to George Holzschuer, who participated in the making of this globe, in 1492. It was left by the said gentleman, Martin Behaim, to the city of Nuremberg, as a recollection and homage on his part, before returning to meet his wife (Johanna de Macedo, daughter of Job de Huerter, whom he married in 1486) who lives on an island (at Fayal) seven hundred leagues from this place, and where he has his home, and intends to end his days.

The main features of interest in the Behaim globe are first the fact that it is a globe and that the maker was therefore obliged to consider directly the width of the ocean between Europe and Asia; second, the strong probability that the outlines adopted on the globe, with the exception of the African coast, were taken from a printed map already fairly widely circulated; third, the persistency with which these outlines were adhered to by later cartographers and their determined efforts to force the new discoveries into this framework. The globe has also great importance in the perennial controversy over the initiation of Columbus' great design and the subsequent evolution of his ideas on the nature of his discoveries.

The longitudinal extent of the old world accepted by Ptolemy was approximately 177 degrees to the eastern shore of the *Magnus Sinus* (the Great Gulf that lay to the East of the *Golden Chersonese* (*Malay Peninsula*)), plus an unspecified number of degrees for the remaining extent of China. Behaim accepted more or less Ptolemy's 177° and added 57° to embrace the eastern shores of China. He thus arrived at a total of 234° for the extent of Eurasia, the correct figure being 131°. The effect of this was to reduce the distance from Western Europe westwards to the Asiatic shores to 126°, in place of the correct figure of 229°. There is no indication on the globe of what Behaim considered the length of a degree to be, but even if he did not go as far as Columbus in adopting the figure of 562 miles for a degree, he presented a very misleading impression of the distance to be covered in reaching the east from the west. Since in addition, *Zipangu* [Japan], in accordance with Marco Polo's report, is placed some 25° off the coast of China on the tropic of Cancer, and the Cape Verde Islands are shown as extending to 30° west of the Lisbon meridian, the distance between them remaining to be navigated is virtually annihilated.

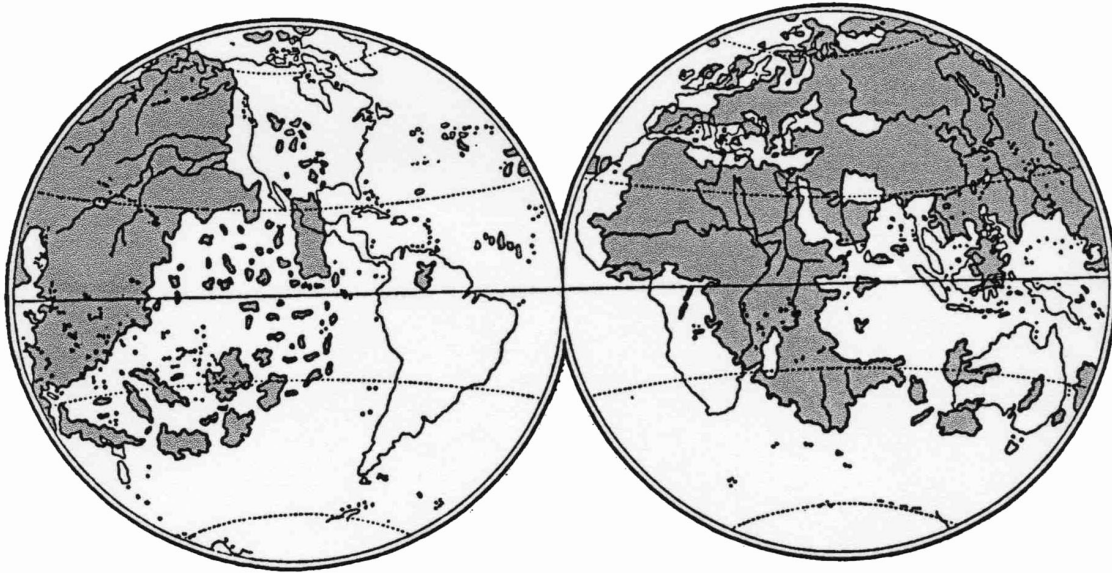


Southeast Asia is represented as a long peninsula extending southwards and somewhat westwards beyond the Tropic of Capricorn. It is a relic of the continuous coastline that linked Southeast Asia to South Africa in Ptolemaic world maps that displayed a land-locked Indian Ocean, and it needs a name to identify it in argument. It bears a rough resemblance to the hind leg and huge paw of a tiger that is facing west. Arthur Davies, in his discussion of the *Martellus* map refers to it as the *Tiger-leg* peninsula; in others it is referred to as *Cattigara* and the *Dragon's Tail*. This feature is a remnant of Ptolemy's *Geography* that evolved when the Indian Sea was closed.



Behaim's globe showing his reliance on Ptolemy and Marco Polo

A comparison of this sketch with Behaim's globe, or indeed with other maps of the period, even including Schöner's globe of 1520 (#328), shows clearly that a much nearer approach to a correct representation to the actual countries of Eastern Asia could have been secured had these early cartographers taken the trouble to consult the account which Marco Polo gave of his travels. India would have stood out distinctly as a large peninsula. Sri Lanka though unduly magnified would have occupied its correct position, and the huge peninsula beyond Ptolemy's "Furthest," a duplicated or bogus India, would have disappeared, and place names in that peninsula, and even beyond it, such as *Murfuli*, *Maabar*, *Lac* or *Lar*, *Cael*, *Var*, *Coulam*, *Cumari*, *Dely*, *Cambaia*, *Servenath*, *Chesmakoran* and *Bangala* would have occupied approximately correct sites in Polo's *India maior*.



According to Marco Polo's records, the longitudinal extent of the Old World, from Lisbon to the east coast of China, is approximately  $142^\circ$ . According to the *Catalan Atlas* of 1375 (#235) this extent amounts to  $116^\circ$ , according to the *Fra Mauro* map of 1457-59 (#249) to  $125^\circ$ , according to the *Genoese* map of the same date to  $136^\circ$  (#248), Behaim, accepting Ptolemy's calculations cited  $234^\circ$ ; the actual extent according to modern maps being  $131^\circ$ .

Paolo Toscanelli in 1474, on the other hand, gives the old world a longitudinal extension of  $230^\circ$  thus narrowing the width of the Atlantic to  $130^\circ$ . This encouraged Columbus to sail to the west in the confident hope of being able to reach the wealthy cities of *Zipangu* and *Cathay*. The author of the *Laon* globe (#259) went even further, for he reduced the width of the Atlantic to  $110^\circ$ . An intermediate position between these extremes is occupied by Henricus Martellus, 1489, who gives the Old World a longitudinal extent of  $196^\circ$  (#256).





Ptolemy, 150 A.D. (#119) -  $180^\circ$   
Marinus of Tyre, 120 A.D. -  $225^\circ$



/  $116^\circ$  /  
Catalan Atlas, 1375 (#235)



/  $125^\circ$  /  
Fra Mauro mappamundi, 1459 (#249)  
(oriented with South at the top)



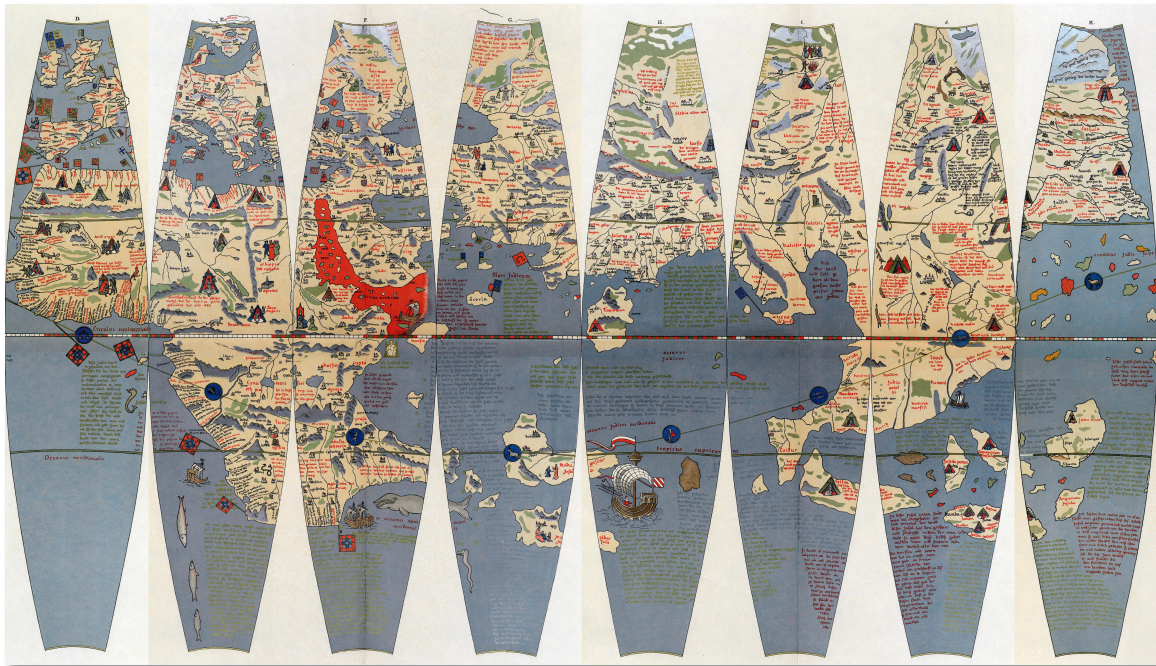


/ \_\_\_\_\_ 136° \_\_\_\_\_ /  
*Genoese mappamundi, 1457 (#248)*



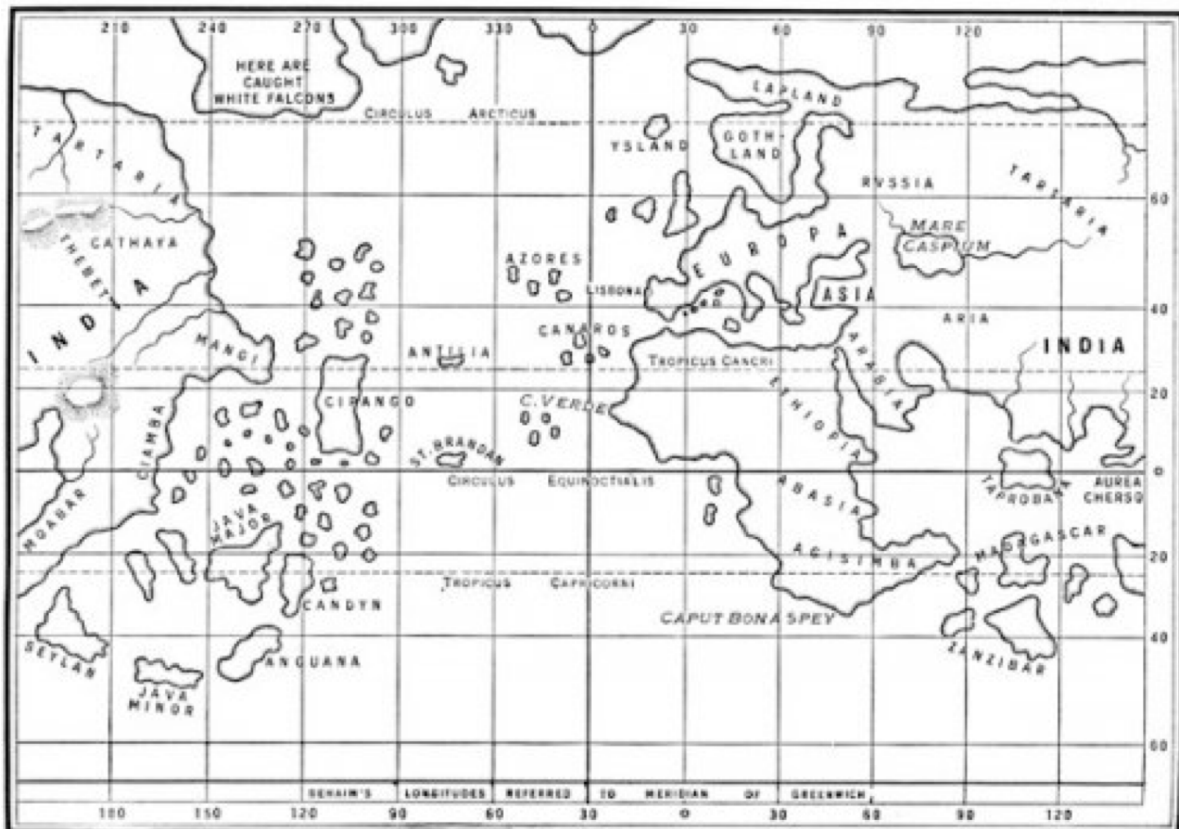
/ \_\_\_\_\_ 196° \_\_\_\_\_ /  
*Martellus world map. 1489 (#256)*



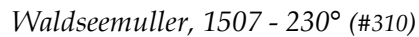


234°

Behaim globe gores, 1492 (#258)



Toscanelli (#252) - 230°

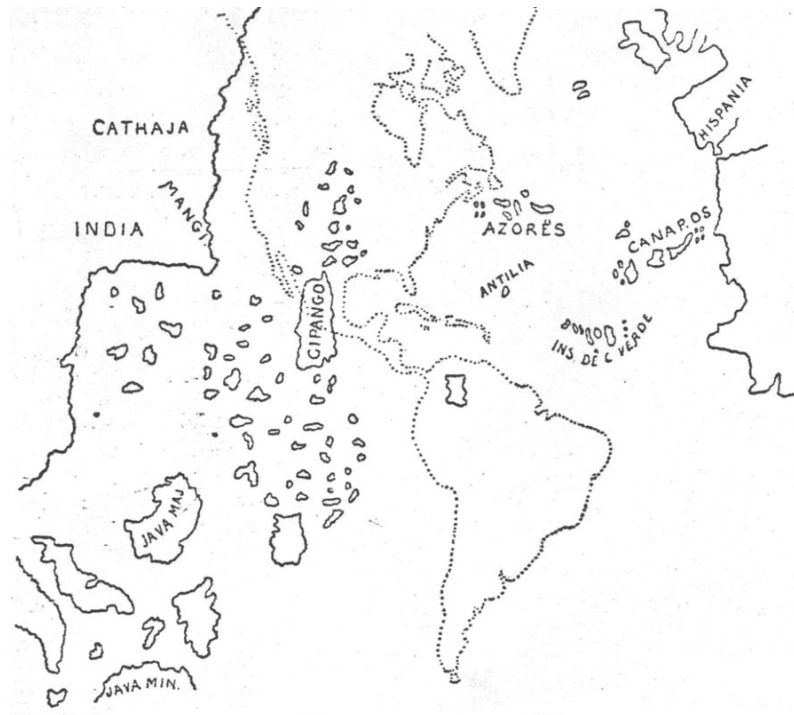


Toscanelli may be deserving of credit, for having been the first to draw a graduated map of the great Western Ocean, but when we find that he rejected Ptolemy's critique of the exaggerated extent given by Marinus of Tyre to the route followed by the caravans in their visits to *Sera*, and failed to identify Ptolemy's *Serica* with the *Cathaia* of Marco Polo, as had been done before him by Fra Mauro, we are not able to rank him as high as a critical cartographer as he undoubtedly ranks as an astronomer. He may have been the "initiator" of the voyage that resulted in the discovery of America, but cannot be credited with being the "hypothetical" discoverer of this new world. That honor, if honor it be, in the absence of scientific arguments is due to Crates of Mallos, who died 145 years before Christ, whose *Perioeci* and *Antipodes* are assigned vast continents in the Western Hemisphere, or to Strabo (66 B.C. - 24 A.D.), whose "other habitable world " occupies the site of our North America (#113).

Be it known that on this *Erdapfel* [Globe] here present is laid out the whole world according to its length and breadth in accordance with the art geometry, namely, the one part as described by Ptolemy in his book called *Cosmographia Ptolemaei* and the remainder from what the Knight Marco Polo of Venice caused to be written down in 1250. The worthy Doctor and Knight Johann de Mandavilla

likewise left a book in 1322 which brought to the light of day the countries of the East, unknown to Ptolemy, whence we receive spices, pearls and precious stones, and the Serene King John of Portugal has caused to be visited in his vessels that part to the south not yet known to Ptolemy in the year 1485, whereby I, according to whose indications this *Erdapfel* has been made, was present. Towards the west the Sea Ocean has likewise been navigated further than what is described by Ptolemy and beyond the *Columns of Hercules* as far as the islands Faial and Pico of the Azoreas occupied by the noble and valiant Knight Jobst de Hürter of Moerkerken, and the people of Flanders whom he conducted thither. These islands are occupied by my dear father-in-law, who owns and governs it. The far-off places towards midnight or *Tramontana*, beyond Ptolemy's description, such as Iceland, Norway and Russia, are likewise now known to us, and are visited annually by ships, wherefore let none doubt the simple arrangement of the world, and that every part may be reached in ships, as is here to be seen.

The ocean on Behaim's globe surrounds the continental mass of land, though covered around the North Pole with many large islands, so that in order to proceed from Iceland direct to the north coast of Asia it is necessary to pass through a narrow strait. The Arctic Ocean, called *das gesrore mer septentrional* [the frozen sea of the North] is surrounded on all sides by land. It is the *Mare concretum* of Pierre d'Ailly's *Imago mundi*, and of the *Ulm* edition of Ptolemy printed in 1482.



An illustration of the longitudinal miscalculation by Martin Behaim





*Behaim Globe: detail of the Atlantic Ocean, Zipangu [Japan] on the left, real and mythical islands such as Antilia and St. Brendan's island center and right*

**Pre-Columbian Summary:** Sometime before Columbus made his first voyage a new world map was made by some unidentified cartographer. This map was a combination of Ptolemy's world map with the descriptions from Marco Polo Travels. We best know this map through the globe of Martin Behaim (#258). There are other examples in the *Martellus* map (#256) and the *Laon Globe* (#259). The maker of this map was very probably Toscanelli, about 1475. Columbus' frequent mention of *Zipangu*, *Zaiton*, *Mangi*, *Gamba*, *Cattigara* and the *Ganges* make evident the influence of Marco Polo and his concepts. His identification of Cuba as a part of the Asiatic mainland is an important part of his concept. He modified the Ptolemy-Marco Polo combination of cartography with his 56.67-mile measure of an equatorial degree. This had the effect of placing *Zipangu* [Japan] and eastern Asia nearer to Europe on the map by way of the Atlantic than it is in fact. This fundamental error was brought about by three factors:

(1) Ptolemy made his farthest east extend to 180 degrees from the *Fortunate Islands* [Canary Islands] meridian to *Cattigara*. This meridian on Ptolemy's map was identical with the second meridian and fraction of degrees west of the *Sacrum Promontorium* [Cape St. Vincent]. Exact comparisons are impossible for many reasons, but the part of the China coast very probably to be identified with *Cattigara* (this assumes that *Cattigara* (*Kattigara*) is probably Hang-chow) is 120 degrees east from Greenwich and 138 degrees east of the Ptolemy meridian. Therefore Ptolemy's 180 degrees extent of his known world was an exaggeration by 42 degrees.

(2) The new map represented by the *Behaim* globe and the Toscanelli letter extended the mainland of Asia to 240 degrees east longitude. Toscanelli placed the coast of Asia about 1/3 of the circumference of the earth west of Europe. This extension was based on a misconception of the identity of the lands of *Cathay* and *Mangi* as described by Marco Polo and therefore duplicated the lands of far eastern Asia. This duplication extended the mainland of Asia 102 degrees beyond the fact and placed *Zipangu's* east coast 30

degrees farther to the east. This false extension to the east had the effect of correspondingly reducing the true distance by way of the Atlantic between Europe and eastern Asia.

(3) Columbus' false degree measure, while it only changed the longitudes and not the distance by land between the prime *Fortunate Islands* meridian and the Far East, did have the effect of still further reducing the supposed distance by way of the Atlantic between western Europe and eastern Asia.

It might be worth noting the degree to which modern geographical knowledge has influenced scholars' attitudes and perceptions. For example, we now know for a fact that the Americas lie between eastern Asia and western Europe, but to an educated pre-Columbian European, the Atlantic Ocean by any name and width would have been the physical feature dividing the west coasts of Europe and Africa from eastern Asia and Africa. Everywhere within the continental European sphere of learning the world was perceived as a globe in the Middle Ages, only with a missing American continent and thus without a Pacific Ocean, while pure speculation had to make do for the earth's southern and northern extremes.

**Post-Columbian Survey:** One cannot claim that Europe indeed "discovered America" in 1492, when it was already occupied for thousands of years and when its actual image of it at the time was that of a few islands off the shores of China. In order for Europeans fully to "discover" America, they first had to realize that what Columbus had in fact discovered beyond the Atlantic was a previously unknown fourth and fifth continent that was absolutely distinct and separate from the other three, a "New World," so to speak.

Part of the reason it took Europe so long to fully discover America as a separate continent was the fact that Columbus' first encounter with it in 1492 actually revealed to his contemporaries only a fractional part of this continent and was evidently insufficient for determining its actual cosmographic status. The full picture of America that we now have could not have possibly been available to anyone in 1492, as it presupposes, for example, the subsequent discoveries of Vespucci and Magellan in South America, Balboa and Pineda in Central America, Corte-Real and Verrazano in the North Atlantic, and Bering and Cook in the North Pacific. Yet part of the delay was also a result of the fact that the process of discovery presupposes a certain readiness to accept that what one discovers may require changing the way one sees the entire world. This kind of readiness to challenge the classical tri-continental image of the world (Europe/Africa/Asia) was something Columbus and many of his contemporaries obviously did not have.

For several decades after Magellan's 1520 voyage, Europeans continued to map the Pacific as a relatively narrow expanse, to fill it with imaginary islands or a hypothetical landmass to the south, or to keep the Americas linked to Asia across the northern hemisphere. To do otherwise would have been to accept any or all of a number of ideas that contradicted the prevailing wisdom, such as the fact that Ptolemy had underestimated the circumference of the Earth, or that Ptolemy and Scripture were wrong in their belief that land predominated over water on the surface of the globe, or that the New World was indeed best understood as 'America,' the 'fourth part of the world.' All of these ideas, of course, would eventually be accepted, but not quickly, and not without a period of anxious effort to jam Magellan's discovery, and its implications, into existing intellectual frameworks.

Outside of Spain, this culture of denial was rampant. To some extent, this was due to the paucity of accurate information. Neither the logbook of the Magellan's *Victoria's* pilot, with its latitudes and distances, or the maps their cosmographers constructed from that data, was allowed to circulate in print. The printed sources, meanwhile, were either vague or inaccurate when it came to the necessary numbers. For example, although the first edition of Antonio Pigafetta's eye-witness chronicle of the Magellan expedition (Paris 1525) included lurid details about the horrors of the Pacific crossing, and even suggested that this was a voyage to 'never

again be made,' it also contained a printer's error that fudged the longitudes in a way that allowed readers to hold onto their view that the Pacific as a narrow oceanic basin.

Vagaries of this kind, moreover, had to be assessed in light of new knowledge arriving from other places. One of these was Mexico, which was conquered by Hernan Cortes during the same years that the *Victoria* was making its way around the world. While Magellan's Pacific suggested that America was separate from Asia, the glittering cities of the Mexico recalled the East Asian civilizations of Marco Polo, suggesting that the opposite was true. Reconciling what seemed to be competing information proved to be no small task. The solution proposed tended to favor established ideas about the world's geography over the potentially revolutionary implications of Magellan's discovery. During the second quarter of the 16<sup>th</sup> century, it actually became more rather than less common, among European mapmakers, to depict the New World as a part of Asia rather than as a separate continent.

As Henry Wagner states, the development of the cartography of the American northwest coast is quite as interesting as that of the American northeast coast, although it has received very much less attention. The reasons for the apparent discrimination are not difficult to find. A large number of explorers visited the northeast coast for one or another reason, it very early became the resort of numerous fishermen, and this in turn made necessary the construction of maps. There was a competition also in that region between the various maritime European powers that made it advisable to obtain all the information possible regarding it. The first discovery in the northeast had been made by the English and the first in the southeast by the Spaniards. A belief arose that a connection existed between these discoveries long before the intervening coastline had been followed, and numerous expeditions were made to find it. The Spaniards insisted that by a prior right of discovery Florida, as they called it, extended indefinitely to the north. The English were equally sure that their discoveries gave them a prior right to everything extending to the south from Labrador. In time, by the process of occupation, the English and Spaniards came into contact with each other in Georgia, and the English being the stronger party ousted the Spaniards. Before this the French had intruded themselves into the territory between and occupied the greater part of what is now Canada, much to the disgust of both their neighbors. Toward the end of the 16<sup>th</sup> century a wordy war was carried on among these three powers about their respective rights and each of the parties made desperate efforts to make good its right by occupation.

The difficulties inherent in all these schemes of occupation were the impossibility of obtaining any utility (i.e., profit) from them and the distance from the home country. One has only to range the eastern coast of America with its sand banks and pine forests in the southern part and rocks and forests in the northern part to realize that there was nothing useful/profitable to the earliest colonists to be obtained from either. For the first half of the 16<sup>th</sup> century the world was gold-mad and anything which did not promise gold (or silver) was passed by.

A similar state of affairs existed on the northwest coast, the chief difference being primarily the greater distance from Europe. The impossibility of obtaining anything of utility/value from it was the same. If anything, the northwest coast is more forbidding than the northeast; almost everywhere, mountains line it from one end to the other, broken only here and there with a small valley. California has obtained such a great name for riches that one is apt to forget that none of the products of the soil contiguous to the sea were of any commercial value until the 19<sup>th</sup> century. Gold did not exist near the sea, still less silver or other metals of value. From Cabo de San Lucas to Alaska but few places can be found near the coast where agricultural products can be raised, and even if the country had been one vast fertile field, of what use would it have been? The distance from the Old World made it impossible to carry on trade with it except in such articles as commanded a high value in small bulk and none of these existed or could be produced on that coast. One hardly realizes today that the northwest part of America was for a long time the farthest removed from Europe of the known inhabited world. No one wanted to go there, and no one did. The Russians, once they began to develop a fur trade, began in small numbers to creep down gradually from the northwest. Their slow but steady advance finally



aroused the attention of the Spaniards, who had lost all interest in the country for two hundred years except for a brief moment.

The result of this indifference, or lack of interest, was to fix the cartography of the country at the northern limit of some forty-two or forty-three degrees, as far as the Spaniards thought they had discovered it. Here in the early Spanish maps we see the coastline break off with nothing but an aching void beyond. Nature is said to abhor a vacuum, certainly a cartographer abhors a blank space on a map; lacking facts he creates theories and the man with the greatest reputation succeeds in imposing his on the credulous public. It is thus that we see the development of the cartography of this part of the coast as in a kaleidoscope, leaving to the historian of the subject the function of supplying the best possible guess about the origin of the fables perpetuated on the maps.

There is nothing that has such an air of verisimilitude as a map. If a *Cabo Blanco* appears on a map in a certain place the inference is obvious that someone must have seen it. If a gulf or a sea appears, one accepts almost without question the fact of its existence. The public is not too critical, and is ever ready to accept something new or novel. The mapmakers who catered to this failing of human nature sold their productions, and others did not, and of course finally could get no publishers. This general attitude of mind is just as common now as it was in the 16<sup>th</sup> and 17<sup>th</sup> centuries. It is not rare to read that some learned man thinks there must have been an expedition on some coast because he has found a map with some places on it which had not appeared there before. Usually the inference is a fair one, but sometimes it leads to strange results.

The number of maps that display the northwest coast is legion, even if we restrict ourselves to the period before the American occupation of northern California. Not only of course did it form part of every map of the world; it also was put on every map of Mexico and North America, and besides, after a good part of it was believed to be an island many maps were made simply to show this feature.

It actually took another 271 years before the absolute separateness of North America from Asia was conclusively demonstrated by the explorer James Cook. However, many European cartographers even during the early part of the 16<sup>th</sup> century already envisioned the two as indisputably detached from each other. Despite the total lack of any empirical evidence, they nevertheless preserved on their maps and globes, beginning with Martin Waldseemüller's original image of North America landmasses as absolutely distinct and separate from northeast Asia. Consider, for instance, the maps, globes, and gores of Johannes Schöner (1515, 1520), Simon Grynaeus (1532), Joachim von Warte (1534), Gerardus Mercator (1538), Batista Agnese (1542), Sebastian Münster (1544), Gemma Frisius (1544), and Michele Tramazzino (1554) world maps, as well as the ca. 1515 *Paris* globe and the Georg Hartmann (1535) and Francois Demongenet (1552) globe gores. They all portray America as fully detached from Asia even in the far north - an absolutely insular fourth continent totally surrounded on all sides by the ocean just as Martin Waldseemüller first envisioned it back in 1507.

Despite Waldseemüller's tremendous influence on the way Europe came to view America, not until the late 18<sup>th</sup> century did it have any conclusive evidence that it was indeed fully detached from Asia even in the far north. For nearly three centuries European cartographers were basically promulgating on their globes and world maps an audacious cosmographic theory which, given the actual geographical information that was available to them, had no basis whatsoever in reality!

It is not easy for 21<sup>st</sup> century readers to appreciate the challenges faced by 16<sup>th</sup> century cartographers, especially when trying to depict little-known parts of the world. They had to rely on a number of sometimes fictional, sometimes faulty, and often speculative and contradictory sources for their information. Some material was obtained by word of mouth, but most sources reached them via manuscript copies, sometimes in unreliable translations, or in printed versions based on manuscript originals. The misreading and miscopying of place-names was frequent. It is vital when investigating problems on early maps and charts to compare as many variant depictions of the areas concerned as possible, especially their varying inscriptions, as recorded by previous, contemporary, and later cartographers alongside their sources when identified. Added

to these challenges is the reality that there was no standard spelling in any language and many letters were liable to be confused. For instance, the letters *l*, *f*, and *j*, often un-dotted, and *f*, the long *s*, were commonly confused. The letters *y*, *j*, and *i* were virtually interchangeable in spelling. The usually undotted letter *i* meant that three in a row could be read as *iii*, or the number three, or as *ui*, *iu*, *ni*, *in*, or *m*. The letter *u* was often used where *v* is used today, and sometimes *v* for *u*; the lower case *u* was capitalized as *V* but because the manuscript *u* and *n* were virtually indistinguishable, *V* could be a capitalization of a lower case *u* or of a lower case *n*.

Yet maps and theories do not only reflect actual geographical realities. They very often portray the purely speculative, empirically unsubstantiated ideas of the people who originate them. In so doing, however, they sometimes help generate amazingly correct new cosmographic visions even when there is no evidence yet to support them. Long before his theory was indeed proved to be correct, Waldseemüller had already provided Europe with a most compelling first image of an absolutely insular America. As we shall see later, that was also true of the purely conjectural— though, prophetically enough, empirically correct—image of a narrow strait separating North America from northeast Asia generated by Venetian cosmographer Giacomo Gastaldi 167 years before Bering actually reached it.

It was their readiness to look at what Columbus had originally identified as “the Indies” from a totally new cosmographic perspective and essentially redefine it as a hitherto unknown continent that set Amerigo Vespucci, Duarte Pacheco Pereira, and Martin Waldseemüller apart from their contemporaries. These intellectual pioneers deserve a special place in the annals of the discovery of America for having had the intellectual audacity to speculate, long before it was empirically demonstrated, that the newly discovered land beyond the Atlantic was in fact something quite distinct and separate from Asia. Instead of viewing it, as Columbus did, as a mere extension of the familiar (that is, a group of islands off the shores of China), they went boldly ahead and redefined it as something entirely new! Most remarkable, in this regard, was Pacheco’s and Waldseemüller’s explicit identification of America as a fourth continent. Given the traditional image of a tri-continental world, it marked a complete shift in Europe’s entire cosmographic perception.

According to Eviatar Zerubavel in his 2003 book *Terra Cognita, the Mental Discovery of America*, Vespucci’s, Pacheco’s, and Waldseemüller’s formidable display of intellectual risk taking is even more remarkable when contrasted with the much more common response of their contemporaries to the totally unexpected discovery of a previously unknown continent beyond the Atlantic— namely denial. The antithesis of intellectual courage, denial is a way of resisting the unfamiliar by forcing it into familiar mental niches, thereby practically denying its novelty or unusualness.

The practical annihilation of classical cosmography by ideas such as Vespucci’s and Waldseemüller’s clearly threatened many Europeans, as it left them without the security offered by familiar structures. The best way to avoid that, of course, was to deny the idea that the newly discovered lands beyond the Atlantic could possibly be anything other than Asia. And indeed, long after 1492 many Europeans still kept insisting that the New World was either totally identical with, or at least somehow attached to, the Orient.

Thus, for example, when Vicente Yanez Pinzón first landed in Brazil in 1500, he thought he was “*beyond the citie of Cathay and the coastes of Easte India beyonde the ryver of Ganges*”. In fact, on his first voyage to South America a year earlier, even Vespucci himself kept searching in the Amazon Delta for *Catigara* (*Cattigara*), the southeasternmost point of the Asian mainland on Ptolemaic maps.

Yet the most glaring example of such a response to the discovery of the New World was that of Christopher Columbus. His cosmographic ideas about America capture this spirit of denial in its purest form. Columbus actually co-opted native words and names into his own system of expectations, being quite certain that his informants were indeed telling him about the Great Khan (“whom they call *cavila*”) or Japan (“which they call *Cybao*”). Such self-delusion also led him to “find” in the New World distinctively Old World plants such as aloe, nutmeg, cinnamon, and rhubarb.

Columbus' relentless efforts to force the totally unfamiliar new continent into the familiar contours of the Old World was relentless. As evident from the entry in his diary on the day of his very first encounter with it, Columbus identified his discoveries right from the start as "the Indies" and its inhabitants as "Indians". Cuba, Hispaniola, and the Bahamas, whose existence had until then been virtually unknown in Europe, thus became in his mind rather familiar entities. They were among the 7,440 islands lying, according to Marco Polo, in the China Sea off the shores of Asia. His strong belief that he had actually reached the Orient is also quite evident from the repeated reference in his diary to *Zipango* [Japan] as well as to the Great Khan.

On his first voyage to the Caribbean, Columbus had already heard from the natives that Cuba was only an island, yet he stubbornly kept insisting that it was part of the Asian mainland and that he was in fact only one hundred leagues away from the Chinese cities of *Zayto* and *Quinsay*. In 1494, on his second voyage there, he returned to the island and, still contending that it was the Asian mainland and that he was not far from the *Golden Chersonese* [the Malay Peninsula], tried to follow its southern coastline westward until he would reach the Chinese province of *Cathay*. Taking the tip of the island (Cape Maisl) to be the easternmost extension of the Old World, he named it *Alpha and Omega* to express his conviction that it was the end of the West as well as the beginning of the East – the point where the two hemispheres actually met!

As we all know, Columbus never reached China on that voyage (or indeed on any other). However, since he stopped and turned back before reaching the end of the island, he could still claim that it was part of the Asian mainland. In order to do so, however, he first had to force all his men to sign a statement under oath (on the punishment of having their tongues cut out if they ever broke it) to the effect that it was indeed part of the mainland and that there was no need to sail any farther to prove it.

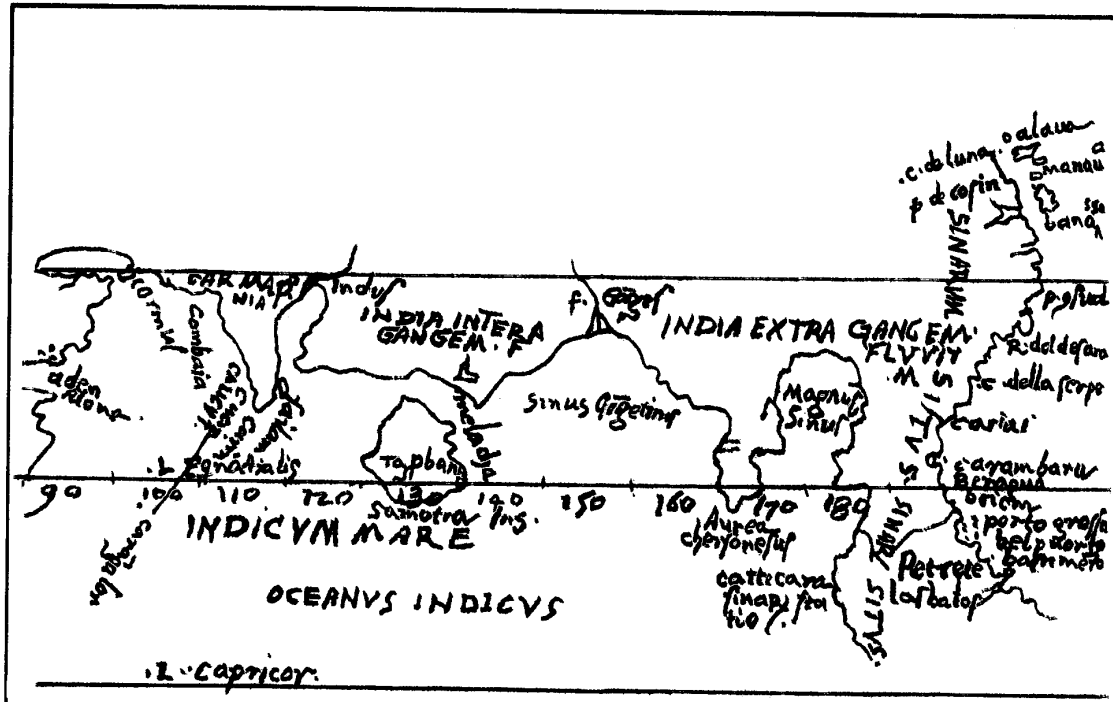
To enhance the cosmographic credibility of his claim that Central America and Southeast Asia were one and the same, Columbus also invoked in his letter to the Spanish MOILUCKS the authority of Marinus of Tyre, the second century geographer whose estimate of the distance separating western Europe from eastern Asia was forty-five degrees shorter than Ptolemy's (in favoring Marinus' estimate over that of his famous contemporary, Columbus was actually reiterating an opinion voiced some ninety years earlier by the French theologian Cardinal Pierre d'Ailly *Imago Mundi*, the most extensively annotated book he owned). "The world is small," he thus announced to his royal sponsors, with only one seventh of its surface actually covered by water. That, of course, would help explain how he could have reached the Orient in such a short time (the very same year, incidentally, the canon of Seville, Rodrigo de Sartaella, correctly placed the West Indies on the opposite side of the globe from India).

The most explicit visual expression of Columbus' own image of America after his fourth and final voyage are three sketch-maps made in 1506 by Alessandro Zorzi to embellish an Italian translation of Columbus' 1503 letter from Jamaica (the *Lettera Rarissima*) to Ferdinand and Isabella, which his brother Bartholomew brought to Rome to present to Pope Julius (#304). Though ultimately drawn by Zorzi, possibly with Bartholomew's help, the maps were most probably based on drawings made by Columbus himself. As evident from the continuous coastline joining Brazil and Honduras on one of them, Columbus must have realized before he died that Central and South America were indeed parts of a single continent. Yet the map also shows that he did not envision that continent as distinct from Asia, since it quite clearly features Central America and Southeast Asia as one and the same. The very same landmass identified on the left side of the map as "Asia" and bearing unmistakably oriental Ptolemaic place-names such as *Cattigra* (*Catigara*) and *Serica* is nevertheless also dotted with names mentioned in Columbus' letter in connection with places he visited in Costa Rica and Panama – *Cariai*, *Carambaru*, *Belporto*, *Bastimentos*, *Beragnia* (*Veragua*), and *Retrete*. According to Columbus, China and Brazil were clearly parts of a single continent. The cosmographic vision of America as part of Asia did not die with Columbus. Three well-known maps produced in Italy soon after his death – Contarini's 1506 (#308), Ruysch's 1507 world maps (#313), and Rosselli's 1508 (#315) marine chart of the world – capture quite vividly the reluctance of many of his contemporaries to accept the fact that the new continent was indeed quite distinct and separate from Asia (the first two were also the

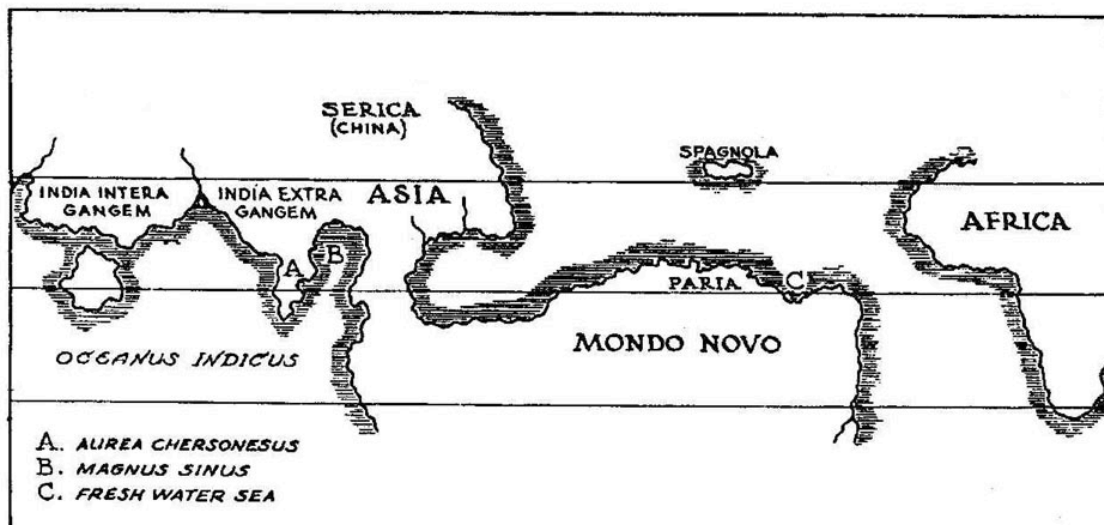
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The third maplet displays India and Southeast Asia



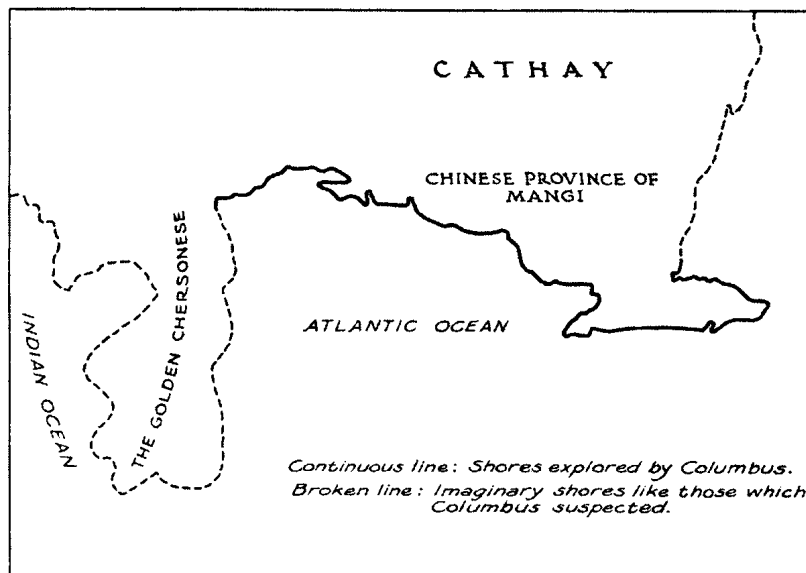
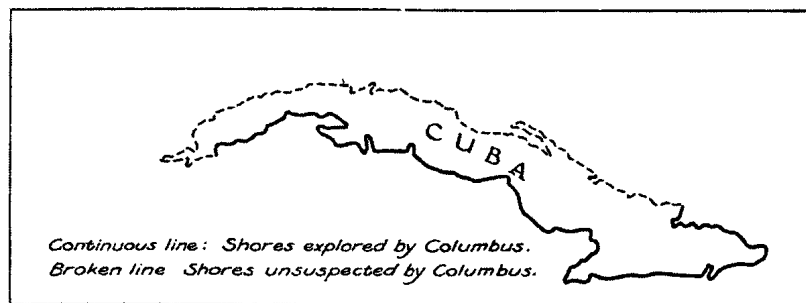
A re-drawing of all three map sketches illustrating Columbus' view of the world

The early Portuguese world maps from 1502-1505 (Cantino (#306), Kunstmann II (#309), King-Hamy (#307.1), Caveri (#307), Oliveriana [Pesaro]) helped promote the separateness of the New World from the Orient in Europe's mind by featuring America on their left side and eastern Asia on their right. By contrast, following the cartographic precedents, set by Zorzi in his 1506 sketch-map, early 16<sup>th</sup> century cartographers like Contarini, Ruysch, and Rosselli all placed eastern Asia on the left side of their world maps thereby allowing for a visual blending of East and West.

Thus essentially denying the uniqueness of the New World, all five maps explicitly portrayed the newly discovered lands beyond the Atlantic as part of Asia. Like Zorzi, Rosselli basically placed Central America in Southeast Asia (west of Indonesia), filling present-day Vietnam with Honduran, Costa Rican, and Panamanian place-names taken from Columbus' 1503 letter — *Cabo Gracias a Dios*, *Bastimentos*, *Belpuerto*, and *Retrete*. Contarini too, noted on one of the legends on his map that on his voyage to Central America, Columbus had in fact reached the southern Chinese province of *Ciamba*.

These maps also portrayed the two great oceans lying west of Europe and east of Asia as practically one and the same. Accordingly, they put *Zipangu* [Japan] in the Caribbean, along with the other "Indies" discovered by Columbus. Contarini thus placed *Zipangu* right next to Cuba while Ruysch went even further, claiming on one of the legends on his map that Marco Polo's *Zipangu* was in fact *Hispaniola*.

The total blending of America and Asia becomes even more pronounced as we proceed northward. As we shall see later, in cutting northeastern Asia off at the edge of their maps, both the producer of the Cantino map and Caveri basically still left open the possibility that it might in fact be connected to North America. Contarini, Ruysch, and Rosselli made that possibility a reality by explicitly placing the recent Portuguese discoveries in Canada and the northeastern tip of *Tartary*, (as did Vesconte Maggiolo in his 1511 world map #316), thus literally portraying North America as an Asian promontory.



Given Europe's rather sketchy picture of both northeastern Asia and northwestern America until the 18<sup>th</sup> century, it took a long time before it could be absolutely certain that the

two continents were indeed not connected to each other in the north. In fact, even Balboa's and Magellan's discoveries in the Pacific did not fully destroy the conservative image of North America as an extension of Asia. While they clearly demonstrated that the New World and Asia were absolutely separate from each other in the south, they still left open the possibility that they might somehow be connected in the yet unexplored north. And though there was no evidence to support such a contention, neither was there any that could altogether eliminate it once and for all. As mentioned earlier, Cortes' first encounter with the Aztec Empire in 1519 certainly heightened the suspicion that China and Mexico were indeed one and the same, leading some cosmographers, for example, to equate the Yucatan Peninsula with *Mangi* or Japan. Such a fanciful blending of East and West, first expressed visually on a small map of the Western Hemisphere made in 1529 by Franciscus Monachus (#337), is quite glaringly featured on the ca. 1528 *Paris Gilt globe* (#344), Oronce Fine's 1534 cordiform world map (#356), the ca. 1535 Nuremberg globe gores, and Giovanni Vavassore's 1558 copy of Caspar Vopel's 1545 world map (#371.2), all of which portray Mexico and China as essentially one and the same. These and similar maps, globes, and globe gores—the ca. 1530 *Nancy globe* (#363), Fine's 1531 world map, an anonymous map from ca. 1535, Vopel's 1536 globe (#364), Haggi Ahmed's 1559 world map (#396), Giovanni Cimerlino's 1566 world map, Bernard van den Putte's 1510 copy of Vopel's 1545 map New Spain, Georg Braun's 1574 world map, Mario Cartaro's 1579 astronomical diagrams (#415.2), Giacomo Franco's 1586 world map—all feature *Hispania Nova* [New Spain] right next to the provinces of *Mangi* and *Cathay*, practically interspersing distinctively Chinese place-names such as Marco Polo's *Zaiton* and *Quinsay* with unmistakably Mexican place-names like *Messigo*, *Temixtitlan*, *Aculuacan*, and *Teniscumatan*. As Orient and Occident literally intermingle, we also see Chinese rivers flowing into the Gulf of Mexico, occasionally identified in fact as the *Mare Cathayum* [China Sea].

The interpenetration of Asia and America on these maps and globes is by no means confined to Mexico alone. Some of them, for example, explicitly equate *Hispaniola* or the Yucatan with Japan and place southeast Asian islands like Java, Timor, and the Moluccas just off the west coast of Central America. They likewise place the southeast Asian province of *Ciamba* in Nicaragua and Ptolemy's *Catigara* (*Cattigora*) in Ecuador. By the same token, in the north they place *Asia Orientalis* right next to *Terra Francesca* [French Canada].

By the late 1530's probably only a very few Europeans in Mexico still believed it was China. In 1539, however, a French Franciscan friar, Marcos de Nina, returned to Mexico from the upper Rio Grande with dazzling stories about camels, elephants, and people with silk clothing, and the following year a Spanish expedition led by Francis Vasquez de Coronado followed those rumors into Arizona, New Mexico, and even Kansas. As one of Coronado's men reported on their return that "New Spain is part of a continuous continent with Peru, as well as with greater India or China. There is no strait in this region to divide it". He also added that the Pueblo Indians must have come to the Southwest from "Greater India" simply by crossing the Rocky Mountains. In the same vein, basically denying the unusualness of the unfamiliar in a style remarkably evocative of Columbus, a Franciscan friar who participated in Coronado's expedition identified the first buffalo ever seen by Europeans as the same kind of cattle Marco Polo had reported seeing on his travels in Asia.

It was evidently such reports that led Venetian cosmographer Giacomo Gastaldi to introduce on his 1546 world map a northern land bridge joining Asia and America (#383). In sharp contrast to Vopel's world map from the year before China no longer blends an that map with Mexico and the actual contact between East and West takes place only in the yet unexplored regions north of California and the Southwest. Yet those regions are definitely an extension of Asia, and in Gastaldi and Matteo Pagano's c.1550 world map one already sees lions and elephants roaming the United States and Canada.

As late as the 1570's and even 1580's, we still find cartographic representations of America that are clearly modeled after Fine's and Vopel's originals. Yet by the 1550's a somewhat different cosmographic vision of the New World starts to dominate the European mapscape: it now no longer fully blends with Asia yet is still attached to it by a northern land bridge.



This new vision of the New World appeared in several other Gastaldi maps in the 1540's and 1550's (for example, his 1548 and 1555 world maps) and was soon adopted by other Europe cartographers as well—Giorgio Calapoda in 1555; Paolo Forlani in 1560, 1562, 1565, and two; Girolamo Roscelli in 1561; Benito Arias in 1571; and Tommaso Porcacchi in 1572. Some of the maps featuring it (Gastaldi's 1548 and Ruscelli's 1561 world maps for example) were even included in new edition of Ptolemy's *Geography*. A few of those maps—Joannes Myritius' 1590 world map and the 1594 and 1599 reissues of Forlani's 1560 and Roscelli's 1561 world maps, for example—were in fact printed as late as the 1590's. In other words, more than a full century after its "discovery" by Columbus, the New World was still envisioned by many Europeans as at least partly attached to the Old.

Forlani's and Roscelli's world maps represent the final death throes of the conservative attempt of Europe to deny the uniqueness of the New World and its absolute separateness from the Old, since they are a glaring expression of the stubborn wish to maintain at least some semblance of connectedness between them. After all, the America they portray is technically still part of the Old World. Indeed, the fictitious land bridge they feature joining Asia and North America was the very last piece of string on which the entire classical tri-continental cosmography was still hanging.



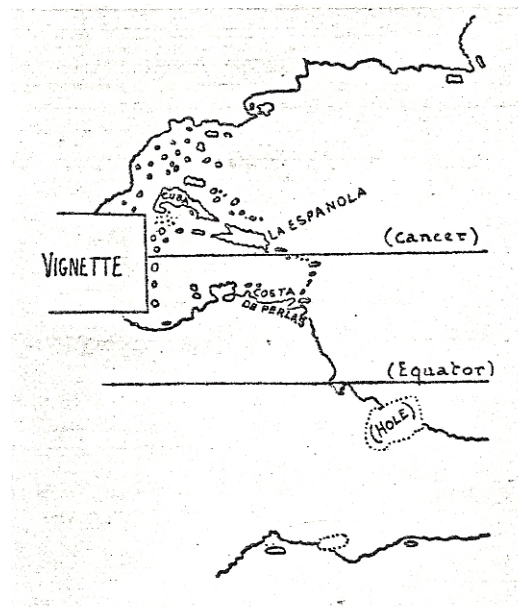
*Juan de la Cosa Portolan World Chart, 1500, 96 x 183 cm (#305)*

La Cosa has been called "the most expert mariner and unrivaled pilot of his age." He participated as a cartographer in the second voyage of Columbus, from 1493 to 1494, and not as a pilot and owner of the Santa Maria the first trip in 1492, a view often repeated in the historiography of the discovery of the New World. From 1499 to 1500, La Cosa took part in voyages of discovery by Alonso de Ojeda (1471-1515), of Amerigo Vespucci (1451 - 1512) and Vicente Yanez Pinzón (ca 1461-ca 1524). With others he signed the famous affidavit, demanded by Columbus, that he believed Cuba to be a part of the mainland of Asia. In 1499, he was chief pilot of Ojeda's expedition along the northern coast of South America. On this voyage, he was associated with Amerigo Vespucci. Upon his return from this expedition in 1500, he made his famous marine chart for Ferdinand and Isabella. Later he went on four other voyages to the new world and in 1509 was killed by the Indians in Venezuela, "pierced by more than twenty



poisoned arrows." In his map, Haiti and Cuba are located north of the Tropic of Cancer. The latter island is now first known by that name. Columbus had called it *Iuna*. Its representation as an island, instead of a part of the mainland of Asia, indicates that La Cosa had changed his opinion since he signed the famous affidavit.

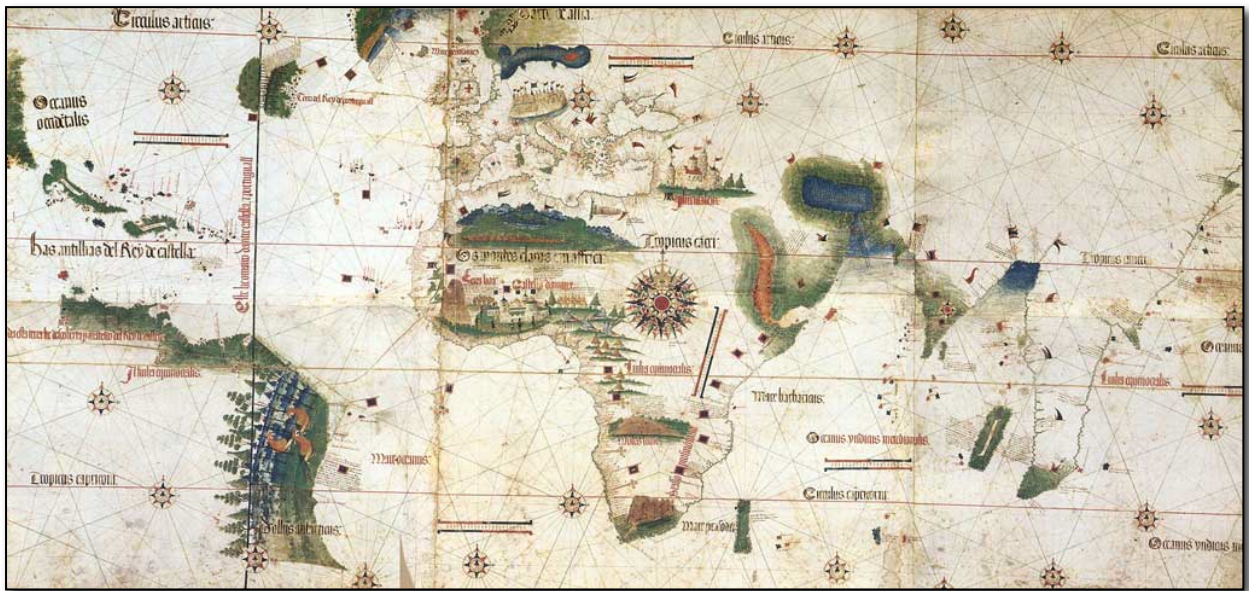
La Cosa avoided the problem of the possible existence of straits in Central America that might provide a sea link to the Far East. Apart from its decorative function, the vignette that he inserted in Central America serves to hide the part of the new lands unknown when looking for a passage to *Cathay*. La Cosa uses a similar ploy by truncating the route from Asia to avoid the question of whether Columbus and Cabot arrived in the far eastern Asia or in a new land. The map exemplifies the problem of the exact concept of the New World and the perception of geographical discovery in the days of La Cosa. The vignette at the left of the map represents St. Christopher, with a pine tree as a staff, carrying the infant Jesus over the deep water, as Christopher Columbus carried the knowledge of Christ over the sea to the natives of the newly discovered lands. Below the drawing of St. Christopher in the neck of the skin, is the inscription *Juan de la Cosa la fizo en el puerto de s. maria en ano de 1500*. It has been suggested that the face of the saint is a portrait of Columbus. It is a matter of argument whether La Cosa intended to represent the mainland behind Cuba as the eastern coast of Asia. If so, it seems strange that he placed no Asiatic names upon it as other cartographers did later on.



The northwestern portion of La Cosa's map sets forth twenty inscriptions, seven of which are the names of capes, whilst one refers to a river (*r<sup>o</sup> longo*), another to an island (*isla de la trinidad*), and a third to a lake (*lago fore?*). Those designations convey no meaning to the scholar (apparently on account of imperfect transcriptions), and are not to be found on any other map, they must be considered as proving that the coast had been actually visited before 1500. On the other hand, the northernmost names represent certainly the points marked by John Cabot during his first voyage, whether we place them on the north coast of Labrador or on the east shores of Newfoundland. But as the line of English flagstaffs covers a space by far too extensive for the Cabot voyage of 1497, which lasted only three months, the legends placed further south necessarily apply to the expedition of 1498. When

preparing himself to return to the newly discovered regions, John Cabot told Raimondo di Soncino that his intention was to pursue the undertaking as follows: "From the place already possessed [discovered] he would proceed by constantly following the shore, until he reached the east, and was opposite an island called *Cipango*, situate in the equinoctial region." All that is clear in this vague description is John Cabot's ultimate objective of Asia. The La Cosa planisphere does not extend eastward beyond the northern border of the Arabian Sea, omitting, therefore, Hindostan, the Malay Peninsula and China. Yet the La Cosa map depicts the *Rio Ganges*, but where one would also expect the Indus River. The Asian portion of the La Cosa map is extremely inferior, particularly compared with other contemporary world maps such as the Cantino chart, although there is only a difference of eighteen months between the two. However, it should not necessarily be inferred from such an important omission that La Cosa considered the continent, depicted by him west of Cuba, as identical with the east coast of Asia, and, consequently, could not have added the latter to his eastern configurations without repeating what he had already marked on the same map. Had such been his geographical conception of the world, he would not have omitted the *India intra* and *extra Gangem*, and especially the *Molucca* regions, nor to

name *Cathay*, *Mangi* and all the cities and provinces rendered famous by Marco Polo and which had figured in all *mappamundi* of the 15<sup>th</sup> century.

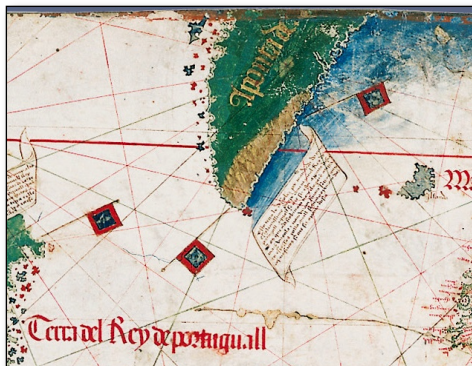


*Chart for the navigation of the islands lately discovered in the parts of India, known as the "Cantino World Map", 1502, 218 x 102 cm (#306)*

Such early 16<sup>th</sup> century maps avoid the explicit connection/separation of the new discoveries to/from Asia. As in other planispheres of the early 16<sup>th</sup> century, and in contrast to Juan de la Cosa's map, the unknown Portuguese cartographer of the *Cantino* map divides North America into three disconnected landmasses, widely separated from one another:

- *Punte de Asia* [Greenland?]
- *Terra del Rey de portugall* [Newfoundland?]
- the land to the northwest of *yssabella* [Cuba], which has been variously

interpreted as representing Florida, Yucatan, and unintentional repetition of Cuba, or a peninsula in East Asia. In the north Iceland is placed very nearly in its proper location and the Corte-Real landfalls in Greenland and Labrador (1500-01) are marked by Portuguese flags and by the legend contained in a banderol (against Greenland): *This land which was discovered by order of . . . Dom Manoel, King of Portugal, they think is the end of Asia*. Only the tip of Greenland is displayed, but with a fair amount of accuracy.

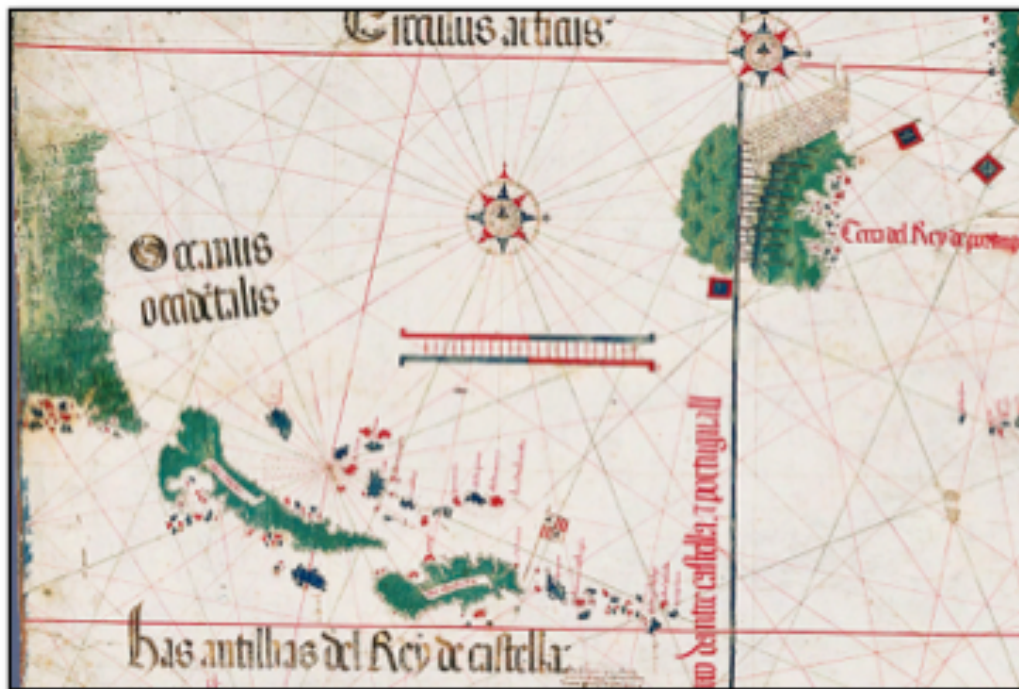


Northwest of *Ilha yssabella* a coastline is laid down marked *Parte de Assia* and bearing names from Columbus' first two voyages. This area, which is incomplete and partially off the map, perhaps is the greatest unsolved cartographic puzzle of the period. Although *yssabella* strongly resembles Cuba, and the peninsula to the northwest could be Florida, there are several theories to the contrary. One is that

the anonymous Portuguese mapmaker confused Spanish reports of the configuration of the newly discovered islands and duplicated Cuba; first as the island but also as the incompletely explored area to the northwest. Another interpretation considers *yssabella* to be Cuba but regards the peninsula as the Asian mainland Columbus and Cabot believed they had reached.



It is to be observed as a matter of special interest that the maker of the *Cantino* map intended to convey the belief that the two continents of North and South America formed a grand division of the earth separated from both Europe and Asia and lying between the two. The conclusion in the case of the *Cantino* map must be arrived at by consideration of the fact that it shows only 257° of the 360° of the earth's surface and that its eastern coast of Asia is shown as bordering on open water. By having the western coast of his North American continent coincide with the western edge of the map, he left indefinite the length of its westward extension, but it seems reasonable to believe that the missing 103° of his design comprised not only westward-extending land but beyond it water of the same ocean that washed the eastern shore of Asia. The *Cantino* chart, therefore, demonstrates clearly that Portuguese cosmographers had entirely abandoned the Ptolemy's figures, and were already aware that the Spanish discoveries in the west, far from neighboring on *Cipangu* [Japan] and the Asian mainland, were separated from them by an interval of almost half the circumference of the globe. The chart might even be said to predict the existence of the Pacific Ocean. The fact that the cartographer has a legend on the discoveries in the northeast American shores stating that they were thought to be part of Asia does not controvert this. For the Portuguese, theoretical and practical considerations happily coincided in this instance; when the question of sovereignty over the Moluccas arose, it was to their interest to reduce the longitudinal extent of Asia in order to bring the coveted islands within their sphere.





*The Caveri [Canerio] world map, 1502-05, 115 x 225 cm (#307)*

Like the *La Cosa* and *Cantino* maps, the *Caveri* map barely portrays the explicit separation of the new discoveries from Asia. In Lawrence Wroth's discussion of the northern discoveries as an element of the Verrazzano story, he states that the *Cantino* and *Caveri* maps take a place of great significance for many reasons, good and bad. One of their common features is their location of Newfoundland as an island "cast far away into the sea" to the east or northeast of the "American" landmass that they both portray for the first time. It is now generally agreed that the maker of the *Cantino* map did not intend to represent the Newfoundland-Labrador landmass as an island, but instead as the known eastern extension of a supposed continental land not definitely located. Not all of the contemporaries of the *Cantino* planisphere interpreted his meaning in this way. The Newfoundland-Labrador land is shown unmistakably as an island in the *Lusitano-Germanic* map group, including the *Caveri* map. A significant point to be kept in mind in the discussion of the *Cantino* and *Caveri* maps, and their chief derivative, the Waldseemüller world map of 1507, is that, whether or not they regarded Newfoundland as an island, they showed Verrazzano and his contemporaries no connection of solid land between Newfoundland and the Florida landmass portrayed on them. This wide expanse of ocean offered unimpeded passage to an explorer seeking a route to China. Also on these two similar maps, it is to be observed that the two mapmakers intended to convey a belief that the two continents of North and South America formed a grand division of the earth, separated as they were from both Europe and Asia. This belief is graphically portrayed in the *Caveri* map where open water borders the western shore of the North American continent. While not shown on the *Cantino* chart, this concept is inferred by the fact that the chart only display 257° of the earth's 360° and that the eastern coast of Asia is bordered by open water, leaving the remaining 103° to speculation.



*Detail of the New World on the Caveri [Canerio] world map*





*The Kuntsmann II (a.k.a. The Four Finger) world map, 1502-06*

*Bayerische Staatsbibliothek, 110.5 x 99 cm. (#309)*

*This map avoids the explicit connection/separation of the new discoveries to/from Asia by not portraying the eastern coast of Asia.*



*Universalis Cosmographia Secundum Ptholomei Traditionem e Et Americi Vespucci Aliorum Lustrationes*, by Martin Waldseemüller, 1507, 4.5 X 8 feet (#310)

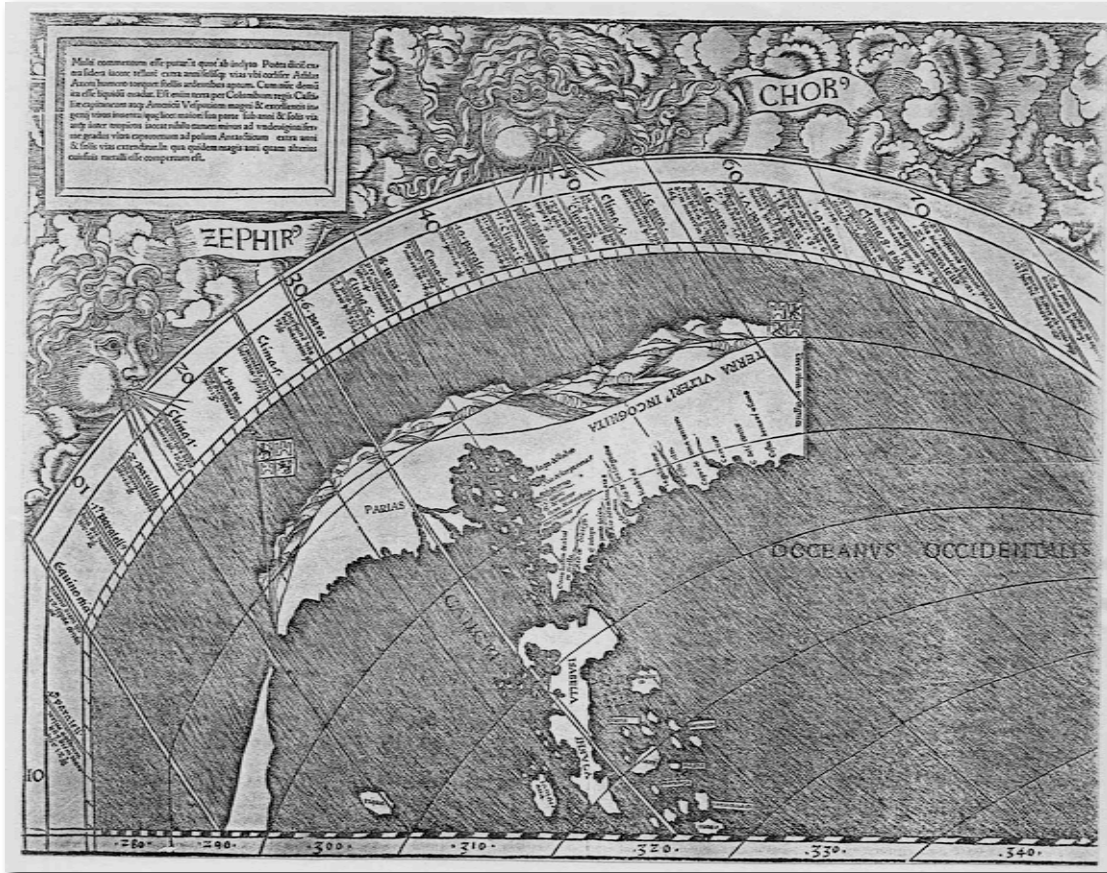
In the western hemisphere inset shown above, the two Americas are shown as a continuous landmass firmly joined together by an isthmus, unlike the representation in the world map where the two continents are inexplicably separated by a strait. To the east of the continent in the inset is the Atlantic, to the west is another great sea with the island *Zipangri* [Japan, Marco Polo's *Zipangu*] nearly in the middle of it but closer to the American continent than to the Asian. Westward from that island is to be recognized the eastern coast of Asia, showing *Catay*, or *Cathay*, and other identifiable names. There was no question whatever in the mapmaker's mind, therefore, as to the separate identities of the American and Asian continents. On each side of the insets, Waldseemüller has prominently placed stylized portraits of Claudius Ptolemy and Amerigo Vespucci. Thus Waldseemüller has tried to appeal to both the traditionalists and to the keen interests of Europeans in the new discoveries. This is also clearly evident in his inscription on Plate IV:

In describing the general appearance of the world, it has seemed best to put down the discoveries of the ancients, and to add what has since been discovered by the moderns, for instance, the land of Cathay, so that those who are interested in such matters and wish to find out various things, may gain their wishes and be grateful to us for our labor, when they see nearly everything that has been discovered here and there, or recently explored, carefully and clearly brought together, so as to be seen at a glance.

Waldseemüller places a land to the west of *Isabella Insula* [Cuba], as do many of the other mapmakers of his time: La Cosa, Cantino, Ruysch and Caveri. This area may represent the coast of China copied from Marco Polo, and placed here in the belief that the new discoveries were in and near Asia. Contarini and Ruysch distinctly record their belief on their maps that the contemporary explorers had reached China, as does the Columbus map and the letter of Columbus explanatory of his fourth voyage record the same view. However, this view is not supported on the Waldseemüller map either by the place-names found in the area of the new



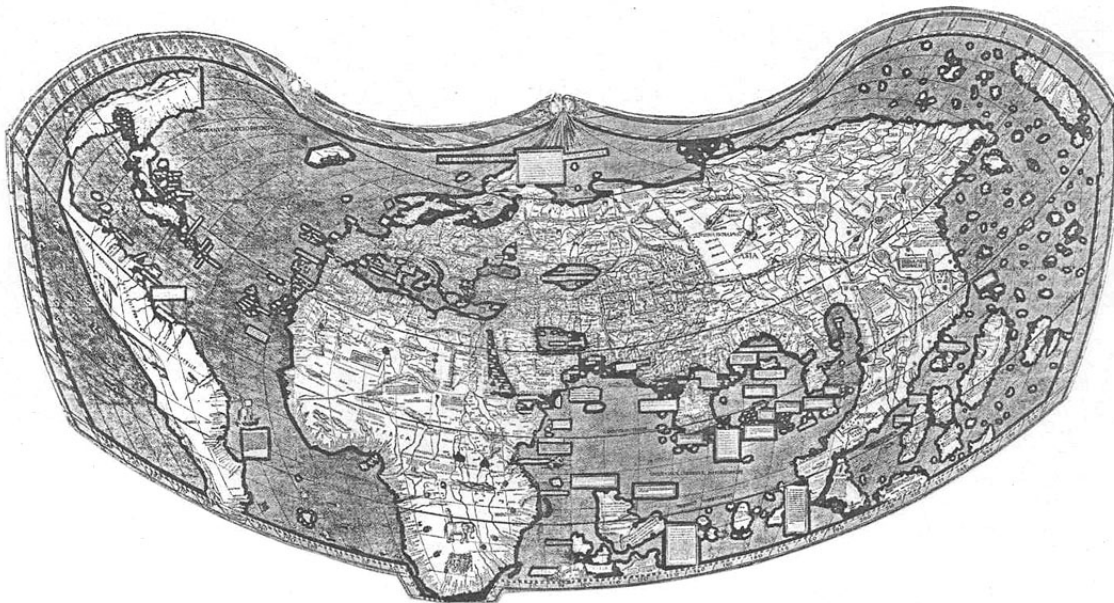
discoveries, or by the overall visual image presented by the placement of the new discoveries as totally separated by some distance from Asia. On the other hand, navigators unknown to modern historians, may have sailed along the coast of Florida at this time. In this respect, Waldseemüller may have been led by the maps of La Cosa, Caveri, and Cantino to believe that this was at least a possibility, for he depicts a small portion of the northern mainland extending from the narrow strait in Central America to just north of *Terra Ulteri' Incognita* [Florida]. Here the northern coast terminates abruptly with open sea beyond approximately 50°, with Newfoundland being shown as an island far to the east. This interpretation is similar to both *Cantino* and *Caveri* and helped keep alive the possibility of a northern access to the as yet unnamed Pacific and, of course, the riches of far *Cathay*.



Leaving the New World discoveries, one cannot help but notice the striking resemblance between Waldseemüller's "Old World" outline and that presented by Henricus Martellus Germanus in his map of 1490 (#256). As can be seen on the accompanying comparison illustration, except for the southern half of Africa, in both projection and general geographical contours the Old World of Waldseemüller's 1507 map seems to have been virtually copied from Martellus. Curiously enough, though, while accepting the Portuguese delineation of the New World and South Africa, Waldseemüller reverts to the Ptolemaic conception of North Africa and Asia as refined and expressed by Martellus, rejecting the more accurate rendering of contemporaries such as Caveri. This Ptolemaic basis results in giving the map an extremely exaggerated representation of the eastern extension of Asia; in fact, the landmass of the Old World, alone, extends through some 230° of longitude. This lack of any substantive modification, of the Far East especially, is understandable in light of the scarcity of verifiable reports from this region and the focus of popular attention on both Africa and the New World.



A comparison of Henricus Martellus Germanus' map of 1490 (outline drawing above) and Waldseemüller's map of 1507 (below)



In addition to Caveri, Martellus and Ptolemy, other sources synthesized by Waldseemüller include the narratives of Marco Polo, whose data concerning the geography of eastern China and the adjacent islands, though already known to the world in the map of Fra Mauro (#249), the *Catalan Atlas* (#235) and in globes such as those of Martin Behaim (#258), are now for the first time embodied in a popular printed sheet map; and the Northmen, whose explorations in *Mare Glaciale* and in the neighborhood of Greenland were known from the maps of Claudius Clavus and those of Donnus Nickolaus Germanus.

Thus, derived chiefly from Caveri's map, itself based in many particulars upon the *Cantino* world map of 1502, the Waldseemüller production of 1507 transmitted the features of both to an impressive list of succeeding maps, globes and globe gores reaching to 1520 and well beyond. It was this succession of maps that the historian Henry Harrisse labeled the *Lusitano-*

*Germanic Group*. The transmission of the *Cantino-Caveri* concept through the members of this notable group created one of the mainstreams of interest in the history of cartography.

Waldseemüller, himself, continued his cartographic production beginning with a revised edition of Ptolemy's *Geographia* (eventually published by others), which included a supplement composed of 20 maps claimed by some scholars to be 'the first modern atlas of the world'. Two maps in this supplement show the New World discoveries, *Tabula Terre Nove* and *Orbis Typus Universalis*. It is important to note here that these two maps actually represent significant retrogression in cartographic expression by the German cartographer. The substantive advancement in geographical concepts found in the 1507 map, i.e., the separation of the new discoveries from Asia, the graphic confirmation of a new hemisphere, the suggestion of the Pacific Ocean, and the fortuitous accuracy of South America, to say nothing of his proposal of a new name befitting the newly discovered fourth part; are all absent from these two maps designed by Waldseemüller just six years later, in 1513. As can be seen, *Terra Incognita* replaces *America* and it is placed up against a frame that avoids any speculation as to the size or shape of the new continent(s). Gone also is that mysterious strait that had separated North and South America on the 1507 map. Over to the left, on *Tabula Terra Nove*, apparently referring to the Pearl Coast and perhaps to Honduras, we read the surprising inscription: *Hec terra cum adjacentibus insulis inuenta est per Columbu ianuensem ex mandato Regis Castellae* [This land with the adjacent islands was discovered by Columbus of Genoa by order of the King of Castile]. A statement that is in obvious conflict with the thrust of both the graphic productions of 1507 (map and globe) and the text of *Introductio Cosmographiae* referred to earlier - both prepared more or less as a testimony to Amerigo Vespucci. But worse inconsistency was to come. In his great and very important world map of 1516, Waldseemüller showed the landmass abutting upon the western border of the map, as in the two above mentioned maps, but here gives it the name *Terra de Cuba Asie Partis*. As a matter of fact, he misinterpreted/misrepresented the *Cantino* concept by the act of placing the *Terra de Cuba Asie Partis* legend on a landmass which *Cantino* had not named but which he thought of, in all probability, as part of a new continent entirely separated from Asia. The regression of Waldseemüller to the Columbian conception of Cuba as a part of the continent of Asia was without question confusing to those who saw the map of 1516 with its specific legend. But it seems that in this particular the map had little influence upon its time. The world picture in the maps and globe of 1507 - the representation, that is, of an American landmass widely separated from the Asian coast with Japan lying between the two - had become the accepted canon in geographic theory and cartographic expression. It is true that certain of the notable globes of the same period as the map of 1516, that is, the *Paris [Green] Globe* of 1515 (#342.1), the *Nordenskiöld Gores* of 1518, and the *Schöner painted globe* of 1520 (#328), in deference perhaps to Waldseemüller apply the name *Cuba* to the landmass, but they discard entirely his designation *Asie Partis*, following instead his bold treatment of the distribution of continents found in the great map of 1507, showing the Americas as separate continents lying between Europe and Asia.





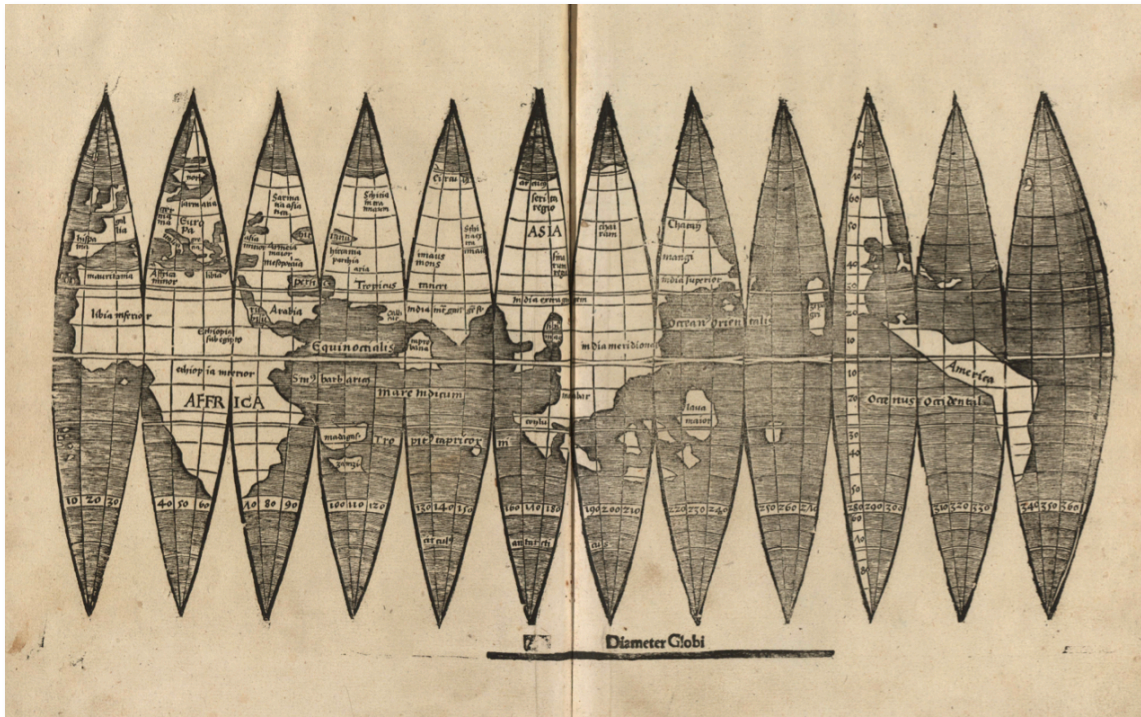
Tabula Terra Nove by Martin Waldseemüller, 1513 (#320)



Martin Waldseemüller's Admiral's Map, 1513 (#320)

The map's only trace of North America lies far to the northeast, where a landfall, probably from a Corte-Real voyage, is recorded. In the title Waldseemüller associates his map with *hydrographorum*, hydrographers, i.e., a sea-chart, and in the style typical of its genre he has avoided conjecture. As a result, the western and southern shores of North and South America are left uncharted, their nature and extent still quite unknown. Further, Waldseemüller does not show a full 360° breadth of longitude, enabling him to clip virtually the entire Pacific Ocean from his map. He does, however, give Asia a finite eastern coast, and by doing so has asserted clearly that both North and South America, whatever their nature, are in fact new lands quite distinct from Asia. His depiction of Asia itself displays an obvious familiarity with Portuguese advances into the Indian Ocean, as he breaks with Ptolemaic tradition by showing the Indian subcontinent and Sri Lanka in their true relative proportions. In Southeast Asia, east of the Malay Peninsula, there is an "extra" mammoth peninsula extending south to beyond the Tropic of Capricorn (a.k.a. the "Tiger Leg"). This is a vestige of Ptolemy's Africa-Asia land-bridge and was an attempt to reconcile that land-bridge with the realization that the Indian Ocean was not the landlocked sea described by Ptolemy. Bartolomeo Dias' voyage of 1487-88 around the Cape of Good Hope had effectively laid that Ptolemaic error to rest.





*Globe gores by Martin Waldseemüller*



*Carta Marina Navigatoria Portugallen Navigationes Atque Tocius Cogniti Orbis. . .*, by Martin Waldseemüller, 1516, 133.5 x 248 cm (#320)

The monumental *Carta Marina* or *Navigators' Chart* of 1516 by Martin Waldseemüller is an even more astonishing tour-de-force than the author's great wall map of 1507. It is approximately the same large size, twelve woodcut sheets measuring in total nearly 8 feet by 4.5 feet.

A lengthy panel in the lower left-hand part of the map contains Martin Waldseemüller's address to the reader, in which he mentions the narratives and voyages he has used, particularly a collection by Francanzano Vincenza published in 1507. Christopher Columbus and Amerigo Vespucci are accorded their place, as well as the 13<sup>th</sup> and 14<sup>th</sup> century explorers Marco Polo, Piano Carpini and Odoric. It is reckoned that Waldseemüller made extensive use of the Caveri manuscript map or a similar source showing the discoveries of the Portuguese to India and beyond. Like this map, the *Carta Marina* is also criss-crossed by directional lines.

Apart from a few retrograde exceptions, Waldseemüller's *Carta Marina* shows the entire world according to the most up-to-date geographic knowledge of the time. He does however leave quite unclear the relationship between the New World and Asia. The western part of the map extends only to 280° west and Asia in the east is cut short at 172°; nearly a third of the world is therefore missing. Waldseemüller's New World, which does not bear, as in 1507, the name *America*, is still marked *Terra De Cuba Asiae Partis*. The Corte-Reals' discovery of Newfoundland or Nova Scotia is signified by a descriptive panel adjacent to a large mid-Atlantic island saying that this land is reported to extend 600 miles, is probably joined to the other continent, and is inhabited by people who live in houses made from tall trees, dressed as the Africa King Emanuel (Manoel) of Portugal rides triumphantly astride a large fish.

In spite of such a rich portrayal of geographical and popular or legendary features, Waldseemüller's *Carta Marina* had surprisingly little later influence. If, like the 1507 wall map, as many as 1,000 copies were printed, then virtually no contemporary records of their dissemination survive. We do not know if they were actually used aboard ships for navigational purposes, or intended to be kept in palaces and castles for reference or decoration. In 1525 a slightly smaller version of this map was recut, also in twelve woodblocks, by Laurent Fries and re-issued in 1527 and 1530. But otherwise no direct derivative from Waldseemüller's map can be traced, and his planispherical "navigational" format was not used for any printed map of importance until Mercator's outstanding new large map appeared in 1569.

Both the west and east coasts of India are shown in remarkable detail, with many place names from Portuguese sources. Further place names extend beyond the mouths of the Ganges down what is now the Malay peninsula, but these localities and kingdoms move into the realm of the hypothetical. To the north in Tartary and China, mountain ranges, woods and rivers abound. A profusion of descriptive legends give accounts of these fabled lands according to medieval travelers' tales.

Waldseemüller, or perhaps the woodcutter artist, has added a host of interesting little vignettes, animals, and regal figures decorating the surface of the map. We see the first opossum in South America, with its large pouch for carrying its young, an elephant and one of the first pictures of a (Indian) rhinoceros in Africa and a mounted reindeer in Tartary. There is also a puzzling animal shown in Scandinavia that seems like a cross between a wild boar and a tusked elephant—perhaps a mastodon. Highly realistic cannibal scenes offer warnings to travelers to Brazil and Java, and in India can be seen what may be a depiction of suttee. Many local rulers are drawn seated on their thrones or in front of their tents: the largest regal vignette is that of the Great Khan of Tartary or China.

The following discussion is from Peter Dickson who presents a new approach to the interpretation of the three Waldseemüller maps of 1507, 1513 and 1520 in his 2007 book *The Magellan Myth*. Dickerson investigated the larger of the two 1513 Waldseemüller maps - the world map, the hydrograph typically known as the *Admiral's* map along with the smaller *Terre Nove* map also in the 1513 edition of Ptolemy's *Geographia*. For the record, Waldseemüller also offered in the 1513 Strasbourg edition of Ptolemy's *Geographia*, a fan-shaped map entitled "*Ptholemei Generale*".

The hydrograph is a *Cantino-Ptolemy* hybrid with Waldseemüller following *Cantino* (#306), actually closer to *Caverio* (#307) for most of Asia, especially the subcontinent with its two peninsulas, but Waldseemüller still shows the *Dragon's Trail* as found in earlier *Ptolemy-Martellus* (#256) maps. The *Cantino* (1502) and *Caverio* (1540) maps do NOT show the *Dragon's Tail*. So Waldseemüller is clinging to Ptolemy at least for a piece of Asia, at the far right margin.



But Waldseemüller clings to Ptolemy to an even greater degree for the depiction of Asia in this large world map of 1507. Now one intriguing question is: If Waldseemüller made or had in his possession the two so-called *Admiral's* maps before or by 1507 which most scholars suspect, why did he not give us the more advanced depiction of Asia which one can see in the 1513 hydrograph? Or to put it differently, why not follow *Cantino/Caverio* all the way in 1507 since he incontestably had access to this cartographic material, surely so for the New World and one must now suppose also for Asia as well.

Dickson's previous speculation that Waldseemüller by 1507 still only had or knew of the New World portion of what one sees in *Cantino/Caverio*, seems highly implausible. It is also implausible that Waldseemüller later acquired the full version and then followed that not only for South Asia but used that to fill in blanks for the central American coastline still present in the earlier *Cantino-Caverio* maps. More plausible is that he had all of the *Cantino* or *Caverio* map by 1507 (the two *Admiral's* Maps) in his possession and followed that for the New World (actually showing even more of the Central American coastline) -- but then why not for Asia as well?

If Waldseemüller had followed *Cantino-Caverio* all the way for Asia as well in his 1507 world map it would have pushed Ptolemy virtually off the map. Perhaps at best leaving him only one attribute - the *Dragon's Trail* which is in fact the small attribute he throws to Ptolemy in the 1513 *Admiral's* map, the larger hydrograph.

But if Waldseemüller had done that also in 1507 it would have undermined the whole thematic of the 1507 world map. The objective or desire was to convey the contrast between the *Ancients* and the *Moderns*, Tradition and New Knowledge, with the two portraits of Ptolemy and Vespucci facing each other in the upper cartouche of the map.



So it looks as if there was a certain aesthetic-political calculation that might help explain the odd decision in 1507 to retain or hold on to the entire *Ptolemy/Martellus* depiction of Asia even though (upon further reflection) it seems that Waldseemüller really had the benefit of more advanced geographical knowledge concerning Asia/Subcontinent region from the *Cantino-Caverio* source material and not just for the New World.

Given the entire package that they were assembling, including the accompanying text in the *Cosmographiae Introductio*, in 1505-1507, the Saint-Die scholars who still planned to return to their work on a new edition of Ptolemy's *Geographia*, did not really want to pitch Ptolemy entirely out the window.

So they finessed the situation in the 1507 world map in a fashion that seems odd at first glance but there was perhaps a certain logic to the way they chose to play it. They were trying to straddle tradition and modernity (new knowledge) and this meant still giving Ptolemy some due in both *Cosmographiae Introductio* but also in the large world map, though again it appears Waldseemüller and other the scholars were in the position to dispose of Ptolemy for nearly all of Asia in 1507.

Dickson thinks that the word "appeasement" is a good word to summarize the state of mind or approach taken by Waldseemüller and the others at Saint-Die. Unlike before, Dickson thinks that now, after further pondering the two *Admiral's* maps, that they were in fact in the position by 1507, based on what they had in their possession, to do a more up-to-date

representation of Asia, especially the subcontinent but it would have meant whittling down Ptolemy too much, risking a possible backlash by their peers. They did not want to go that far given the power of tradition, hence the solution which they reached which allowed them to contrast the old with the new and do so without totally alienating the traditionalists still out there.

Furthermore, as far as the world map of 1507 is concerned, you cannot really visually contrast the Old and the New in this map unless you retain a significant portion rooted in the Ptolemaic tradition, hence the Ptolemaic depiction of Asia which (again) Dickson thinks they had to know by 1507 was not quite up-to-date anymore.

For Dickson, it makes no sense any longer that Waldseemüller and company in 1507 had only half, the left half or the New World portion of what you see in the *Cantino/Caverio* maps. Dickson thinks that they had it all but for the aforesaid reasons, the appeasement calculation or strategy, they did not use it all.

In 1513, Waldseemüller still leaves a little bit for Ptolemy but not much, just the *Dragon's Tail*. The 1511 edition of Ptolemy's *Geographia* (Sylvanus or Venice edition) still clings fully to the *Ptolemy/Martellus* depiction of Asia. And Dickson thinks that this was the last time that ever happened.

Most scholars believe that the *Admiral's* maps were made by Waldseemüller before 1507 and that he returned to them, "dusted them off" for this inclusion in the 1513 work. If correct, it is worth noting that the *Terra Nove* map clearly shows that the New World in the Gulf-Caribbean formed a huge *cul-de-sac* or "navigational dead end", to use the phrase of John Perry in his *The Discovery of South America* (1976).

Waldseemüller gives no suggestion of the Pacific here in either of these two *Admiral's* maps. In fact, all Waldseemüller was doing was simply recycling (especially in the one 1513 map known as the *Terre Nove* map) the *Cantino/Caverio* depiction of the New World. However, here in the *Terre Nove* map of 1513 Waldseemüller actually gives you everything hidden or withheld from these two maps -- namely, the entire unbroken coastline for the Central American mainland in the Gulf/Caribbean region.

The more you ponder the *Terre Nove* map, which most feel Waldseemüller obtained or made himself before 1507, the more amazing it appears. Not only does it give so much about what the Spanish knew early on about the *cul-de-sac* they faced to the west, it drives you to the conclusion that Waldseemüller never had the full *Cantino* map to work with. We know that he followed *Ptolemy/Martellus* not *Cantino* for most of Asia. Yet he filled in the blank spots for Central American coastline that are missing fragments in the *Cantino/Caverio* map but which are all there for us to see in the *Terre Nove* map, presumably obtained from some Admiral, presumably Columbus since we know of no Portuguese Admiral who explored the New World holding that exalted title.

Whatever the truth, the *cul-de-sac* to the west was well known by the Spanish well before 1507.

Dickson argues that no later than 1500 and possibly as early as 1498, given Columbus dramatic shift to the south for the Third Voyage, (Wey Gomez's Southern theme which Dickson thinks only holds for the period from 1498 onward and not from the start in 1492). This means that the small hemisphere map in the cartouche of Waldseemüller's world map is spot on, that the Europeans (meaning especially the Spanish) knew there was no strait to be found north of the Equator. The Spanish knew that they were trapped or stuck with no opening to the west.

One interesting fact among many clues pointing to a Columbus input into the Waldseemüller work is the fact that not only was the *Terre Nove* map described as being based on an *Admiral's* map but that the courier of the *Cantino* map to Italy (Francesco Cattaneo) was probably the same Francesco Cattaneo who took Columbus' famous book of Privileges to the Bank of Saint-George in Genoa also in 1502.

There is no Vespucci angle here as far as Dickson knows as being a provider of *Cantino*-based source material for Waldseemüller to have in his possession. Waldseemüller had to get this knowledge from somewhere - and Columbus or the Colon family network is one plausible explanation. Thus, in Dickson's view, the "Admiral" in question behind the *Admiral's* maps in

Waldseemüller's early possession surely was Columbus as many scholars have argued or suspected.

## *Waldseemüller's Reversal*

Taking this analysis of all the facts into account, these observations bring us back to the question of what motivated Waldseemüller a few years later to back away from using the name "America" for the New World and also to abandon certain cartographic depictions, especially the southern continent's overall physical configuration and the image of a cape or strait as clearly shown in the small globe gores from 1507. It is probably not an irrelevant fact that Duke Rene, the Grand Provost Louis Dommartin, and Mathias Ringmann all died in the 1508-1511 period. Surely, these deaths would have made Waldseemüller feel a little lonesome emotionally and perhaps also politically as he struggled to finish the new edition of Ptolemy's *Geographia*.

Setting aside the possible impact of these untimely deaths on Waldseemüller's state of mind and also for the moment our discussion of the motivation for the changes, what exactly were the alleged improvements that in terms of cartographic representation are to be found in the two Waldseemüller maps showing the New World inserted in the Strasbourg edition of Ptolemy's *Geographia* in 1513? And did Waldseemüller stand by these changes when he then prepared the large world map known as the *Carta Marina* of 1516 that, as far as we know, was never published?

With respect to Asia, Waldseemüller provides in the larger of the two 1513 maps entitled *Orbis Typus Universalis Iuxta Hydrographorum Traditionem*, a new depiction of South Asia that is more realistic than that of Ptolemy and includes what we know as the Malaysian peninsula. At the same time, Waldseemüller fails to include Japan (*Cipangu*) in the 1513 and 1516 maps as he had in 1507. With respect to the *Carta Marina* of 1516, this map curiously ends on the eastern edge so as not to show the so-called *Dragon's Tail* that originated with Ptolemy. It is not clear Waldseemüller meant to signal to other cartographers that this last major Ptolemaic geographical feature should be abandoned. He also places *Java Major* below the new depiction of the elongated Malaysian peninsula, whereas Ptolemy placed it to the east of the *Dragon's Tail*.

With respect to the New World, in sharp contrast to 1507 when the small globe gores showed a cape for the new continent in the southern hemisphere, Waldseemüller refuses in the large world map of 1513 to show the new southern continent below 40 degrees latitude south or to give any hint of a cape or a strait. He stays with this new position in 1516 by avoiding any depiction below this latitude of 40 degrees. This concealment is puzzling. His own mentor and teacher Gregor Reisch essentially recycled Waldseemüller's 1513 world map in the 1515 edition of his own famous work entitled *Margarita Philosophica*. Moreover, the reader can see in this map much more of the eastern coastline of South America, as far south as 50 degrees which was the point that Vespucci had claimed in *Mundus Novus* to have reached on his voyage in 1501-1502. Why do we see 10-12 degrees more of this coastline in this map from 1515 compared to its companion versions that Waldseemüller had prepared in 1513 and 1516?

Waldseemüller also goes back and forth on how to depict the region we know as Central America. In the smaller of the two 1513 maps known as *Tabula Terre Nove*, Waldseemüller shows a continuous unbroken coastline as he did in the inset map found in the upper cartouche of the large world map of 1507, thus dropping any notion of a strait in the Central American region which he curiously had inserted in the main portion of the world map. Yet with the *Carta Marina* of 1516, Waldseemüller reverses himself again. Indeed, incredulously he reverts or falls back all the way to the depiction of the New World we find 14 years earlier in the *Cantino* map of 1502.

This bizarre reversal means that for some strange reason Waldseemüller was willing to show a huge opening or water passage - not merely a narrow strait - in the Central American coastline that would have been quite an absurd geographical notion by 1516 - three years after Balboa had to mount his expedition to cross the Isthmus to see the Pacific Ocean. How could Waldseemüller as late as 1516 have been that mistaken about what the Spanish had known about Central America for more than a decade - namely, that there was no strait in this region? Why this bizarre and glaring contradiction with the earlier are far more geographically correct



depictions of a continuous unbroken coastline we find earlier in the small western hemisphere map of 1507 and the *Tabula Terre Nove* map published 1513?

Another odd aspect of Waldseemüller's depictions concerning the New World can be seen in both of his 1513 maps which curiously and incorrectly move *Hispanola* and the eastern portion of *Isabella* [Cuba] above the Tropic of Cancer - a placement which was reversed in his 1516 map where moves them back below this latitude as had them in the 1507 world map. Some scholars have argued that this erroneous placement of the two islands north of the Tropic of Cancer is a strong indication that these two maps of 1513 actually had been prepared much earlier, well before 1507 but set aside at that time, only later to be dusted off and used without correction for the Strasbourg edition of Ptolemy's work in 1513.

Perhaps this is a correct interpretation of what happened. Certainly this analysis, if correct, would help to explain why the two maps in the Strasbourg edition fail to show the eastern coastline of South America to a point 50 degrees latitude south. Surely if we see them as basically a recycling of what one already finds in the *Cantino* and *Caverio* maps from the 1502-1504 period, then one can credibly argue that these maps were made before the work for the more ambitious project had reached completion in April 1507 -- and thus before new information had been obtained from Portugal about how much of the eastern coastline, the cape or strait and ultimately the western coastline had been explored.

Last but not least, Waldseemüller in the 1516 map places on the northern portion of the Americas the phrase: *TERRA DE CUBA ASIE PARTIS*. With this phrase, Waldseemüller seems to be suggesting that the huge American mainland might still somehow be attached to or be an extension of the Asian landmass as opposed to being like an island-like continent as suggested in *Cosmographiae Introductio*. This new phraseology that suggests that Asia has two east coasts certainly was not what was visually conveyed in the 1507 world map and globe gores. The best way to reconcile these two different perspectives would be to argue that Waldseemüller's view of the southern continent did not change substantially, but that he did not wish to exclude the theoretical possibility that what we know as North America might be attached in some circuitous fashion to Asia.

Dickson believes with respect to the first of these two major reversals -- the name for the New World - the real explanation has nothing to do with a sudden awareness of a major error or oversight concerning Columbus. '

According to Dickson Waldseemüller essentially recycled the same *Cantino/Caverio* depiction in 1513 again in the *Carta Marina* in 1516. Dickson argues he did that for political reasons, not in response to any ecclesiastical pressure, it was his sensitivity to unhappiness being conveyed from the Portuguese Court (King Manuel). But this clear reversal could not blot out the real level of European nautical achievements/expertise as of that time 1513-1516. Take good look at the *Carta Marina*, it seems amazingly as if Waldseemüller in 1516 does not want you to think too much or even know about Balboa's 1513 expedition or even his own famous 1507 map and the bold assertion about the island-like character of the new southern continent. That is not credible at all, but he was under some political pressure, argues Dickson, to start backtracking by 1513. King Manuel was far more powerful than King Ferdinand. He even forced the Pope to pull the Inquisition out of Portugal in 1506-1507. So the scholars at Saint-Die were pushing the envelope politically in revealing more than Lisbon wanted to see in print.

It is a fact that the *Hydrograph* or *Carta Marina* of 1513 (like the large world map from 1507) retained many place names associated with the time of Ptolemy. Whereas the *Carta Marina* or second hydrograph of 1516 is by far the most detailed in terms of modern place names as well in terms of the depiction of the three older continents.

However, when one compares how Waldseemüller chose to depict the New World in 1516, really the startling thing one notices is how what he did was inferior or incomplete compared to what he had offered in either the world map of 1507 or the *Tabula Terre Nove* in 1513. Waldseemüller retreats all the way back essentially to the *Cantino* and *Caverio* maps from the 1502-1504 period which show a huge water passage to the west in the region we know as Central America. This decision is bizarre, especially in 1516 which was many years after the Spanish

(meaning also Columbus and Vespucci obviously) already had concluded that there was no strait in this region and also three years after Balboa was able to cross over the isthmus of Panama to see the Pacific ocean.

There is no credible explanation as to how on intellectual or rational grounds Waldseemüller believed that this second hydrograph or *Carta Marina* was an accurate, complete depiction of what was really known about the New World in 1516. Dickson concludes that when all the evidence is taken into consideration, Waldseemüller, following the deaths of three of his patrons and collaborators -- Duke Rene, the Grand Provost Dommartin and Ringmann - and toward the end of his own life, wanted to avoid any further complaints about his cartographic works from the Portuguese King Manuel's court to which the Vatican was highly deferential, as it had been toward his predecessors for three centuries. Hence, the clear effort Waldseemüller makes in the *Carta Marina* of 1516 to emphasize Portuguese achievements compared to those of Spain, to protect Lisbon's interests by not showing what was in fact known about the new southern continent below 40 degrees south of the Equator, and last but certainly not least, to offer an image of King Manuel riding in triumph a sea monster to underscore the preeminence of his maritime empire.

In any case, that more was known about the New World and the Pacific Ocean by 1505-1507 seems clearly suggested by the *Lenox* globe (#314), Waldseemüller's 1507 world map /globe (#310) and Glareanus' (#322.1) decision to disclose what Waldseemüller kept out of his world map.

Dickson laid out his analysis in two essays in *Exploring Mercator's World* in 2002-2003, in a lecture at the Library of Congress in October 2002 and in his book *The Magellan Myth*. Many will continue to insist that this depiction was a mere coincidence or lucky guess because the inclination to deny any European knowledge of the Pacific prior to Balboa/Magellan and to regard all pre-Magellan maps showing a west coast as "provocative geographical cartoons" (to quote the words in Lawrence Bergreen's biography of Magellan) remains strong.

Indeed, we now have Philippe Fernandez-Armesto in his Vespucci biography suggesting or implying that Waldseemüller's depiction in 1507 of even the East coast -- yes the East coast not the West coast -- of South America below the Rio de la Plata was also imaginative fiction, essentially a fantasy. If Fernandez-Armesto is correct, then in Waldseemüller in his world map of 1507 basically drew two fantasy coastlines -- on East as well as the West side -- that mysteriously yielded a highly accurate depiction of the ice cream-cone shape of South America. What are the odds of that happening? Dickson thinks it is zero. For his part, Dickson does not accept that the Waldseemüller map was a fantasy map to this degree.



*The Contarini/Roselli World Map, 1506, by Giovanni Matteo Contarini & Francesco Roselli, 42 x 63 cm. This is the oldest known printed map to show America. (#308)*

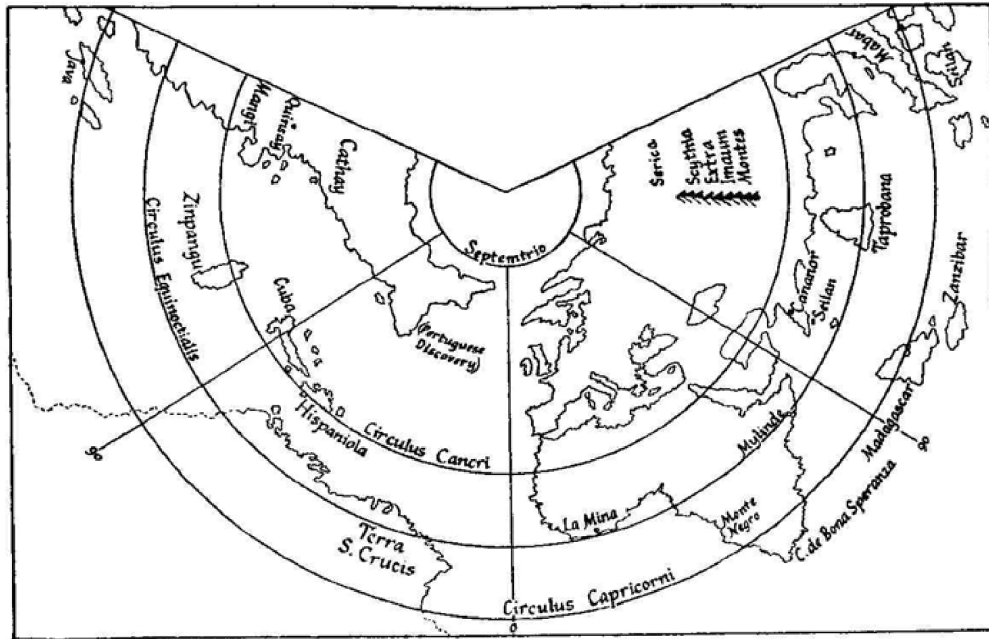
This map, on a conical projection with Ptolemy's prime meridian as the central meridian and the equator truly drawn, has the eastern coasts of Asia in the west and Ptolemy's *Magnus Sinus* and the islands of the medieval travelers in the east. In one of the inscriptions the cartographer says: *if by folding together the two sets of degrees [i.e. on the eastern and western margins] you form them into a circle, you will perceive the whole spherical world combined into 360 degrees*. This world map represents the earliest attempt to bring the Far East and Far West into relationship to one another. Most maps of the period such as those of Caveri, Cantino, Juan de la Cosa and Waldseemüller show the eastern and western discoveries at the extreme right and extreme left and make no attempt to indicate their connection with respect to a spherical earth. While the map seems puzzling at first, a closer look reveals the shape of the world as widely imagined by Europeans at the time of its publication. The three active European maritime nations: Spain, Portugal and England, represented by Columbus, the Corte-Reals (Gaspar and Miguel) and Cabot, all presumed that the new lands discovered in the West Indies and North America were in and around an extreme easterly promontory of the Asian continent, the province of *Tangut*, another place-name from Marco Polo. This is just how these lands appear on Contarini's map. Perhaps its most charming feature is the legend off the east coast of Asia indicating that Contarini, along with Columbus in 1506, the year of the Admiral's death, believed that the great explorer had reached the coast of Asia. It reads:

*"Christopher Columbus, Viceroy of Spain, sailing westward reached the Spanish islands after many hardships and dangers. Weighing anchor thence he sailed to the province called Ciamba [the "Champa" of Marco Polo, known today as Vietnam]. Afterwards he betook himself to this place which, as Christopher himself, that most diligent investigator of maritime things, asserts, holds great store of gold."*

Fifty degrees of longitude east of Asia, and on the Tropic of Cancer, appears *Zipangu*, [Japan] which is stated to be identical with *Hispaniola*. Between *Zipangu* and the west African coast, the discoveries of Columbus and the Spaniards are inserted, the group of islands, *Terra de Cuba*, *Insula Hispaniola*, etc., with no suggestion of a North American continent. In its cordiform projection and the extension of Asia to the northeast, the map resembles that of the Ruysch map published two years later. It was evidently based on that by Claudius Ptolemy. There is the same large peninsula (i.e., the *Tiger-leg* or *Dragon's Tail*) to the southeast of Asia without the latter's *Terra Incognita* to the south.

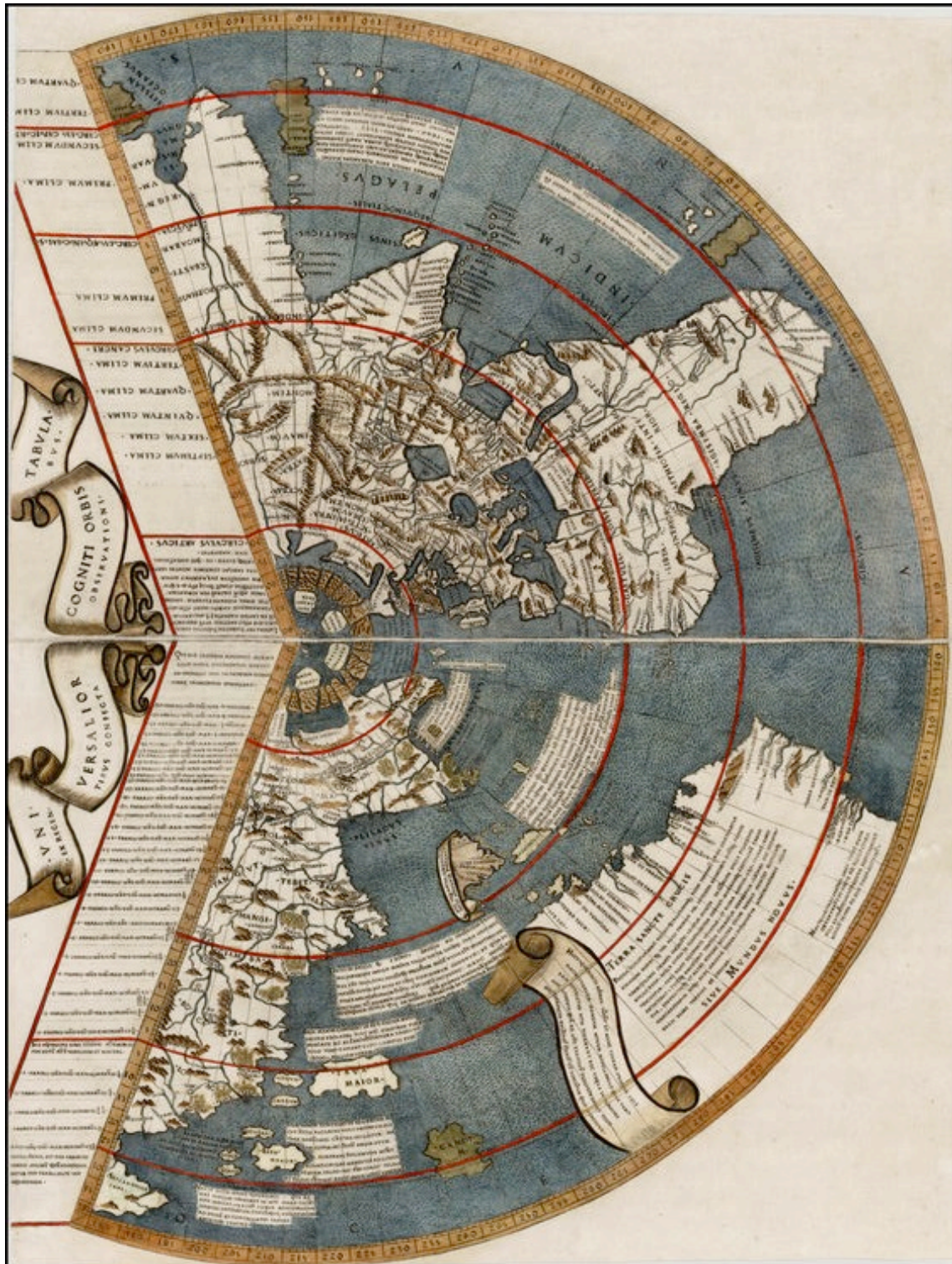
The omission of a coastline to the west of *Terra de Cuba* has a double significance. It would seem to indicate that Contarini knew nothing of the alleged voyage made by Vespucci in 1497 along the eastern coast of North America, and that in 1506, the date of the death of Columbus, Contarini shared the current belief that the great explorer had reached the coast of Asia. Further evidence of this is found in the previously cited inscription off the east coast of Asia.

*Zipangu*, or Japan, is described thus: "This island lies 1,500 miles eastward from the coast of *Mangi*. It has gold in abundance, but this is not easily allowed to be removed. They are idolaters. This island appears a mere 20° of longitude west of Cuba; and Marco Polo's *Cathay* is displayed only 60° west of the new discoveries".



A re-drawing of the Contarini/Roselli map (from Crone)





*Universalior Cogniti Orbis Tabula, Ex recentibus confecta observationibus*, by Johannes Ruysch, 1507-08, 40.5 x 53.5 cm (#313)

This enlarged map of the known world by Johannes Ruysch constructed from recent discoveries, engraved on copper, is one of the earliest printed maps showing the discoveries in

the new world. Although there had been maps created after these voyages, such as Juan de la Cosa's map of the world in 1500 (based on Columbus' second voyage), and the *Cantino* world map (circa 1502), because they were one-of-a-kind manuscript maps these maps were not widely known in Europe outside of the professional circles of mariners and government officials for up to fifteen years. Only a few copies of these maps survive not simply because they were manuscript rather than printed maps, but also because they were often regarded as state secrets. This situation changed drastically from 1506 to 1507 when three separate efforts to produce printed world maps were published. The *Contarini-Rosselli* map of 1506 and Martin Waldseemüller's map of the world and globe of 1507 were very influential, but not very widely published. There is only one original copy of each map in existence today, and both of these copies were discovered in the 20<sup>th</sup> century. By contrast, Johannes Ruysch's 1508 map of the world was much more widely published and many copies were produced and still exist. It therefore had a very large influence. Except for small details, the projection is identical with that of Contarini's map. It is stated to be *ex recentibus confecta observationibus* [composed from recent observations], and certainly draws on sources later than Contarini. The Indian sub-continent has much better proportions, but the Far East is in general still Ptolemaic, and the three 'Ceylons' occur again. The inscription identifying *Zipangu* with Hispaniola is repeated, but there is an interesting addition 20° west of the Azores where *Antilia insula* is inserted, the mythical island in the Atlantic, which first appears on charts of the early 15<sup>th</sup> century. In South America there are also important additions. The eastern coast is continued southwards to the *Rio de Cananor* at 30°S, and it is noted that exploration has extended to 50°S latitude, a reflection of Amerigo Vespucci's voyage of 1501. In the north, there is an isolated portion of the mainland, probably Florida, and the Portuguese discoveries in the far north, with the addition of Greenland, are again shown as part of Asia.

*Zipangu* [Japan], which was shown prominently in mid-Pacific on the *Contarini-Rosselli* map is omitted completely by Ruysch. He refers in an inscription to Marco Polo's account of *Zipangu* but admits he is puzzled as to its true position and concludes that *Spagnola* [Haiti/Dominican Republic] must be the island in question. Ruysch has produced the first printed map on which the delineation of the interior and eastern parts of Asia is no longer based exclusively on the material collected by Marinus of Tyre and Ptolemy more than a millennium previously, but on more modern reports, especially those of Marco Polo. Various new names are here added in *Scytia intra Imaum*, such as *Tartaria Magna* and *Wolha* [Volga], and an immense, quite new territory, an *Asia extra Ptolemaeum*, or *Asia Alarci Pauli Veneti*, is added beyond the eastern limits of Ptolemy's *oikumene* [known world]. Here the Chinese river-system is given in a manner indicating other sources for the geography of eastern Asia, than Marco Polo's written words. In its main features the delineation of eastern Asia, to the south of latitude 60° N, on the map of Ruysch, so nearly resembles Behaim's globe, that a common original might have served for both. Ruysch's treatment of Greenland exemplifies the composite nature of his representation. Ruysch correctly draws *GRVENLANT* [Greenland], as separate from Europe, not connected with Europe by a vast polar continent as some earlier maps indicate. Instead of connected with Europe, he links Greenland with Asia through *Terra Nova* [Newfoundland]. In addition, he shows the northern polar regions as a basin with a number of islands, thus prompting the long-held hope for a Northwest passage from Europe to Asia. Ruysch seems to have had no doubt that *Gruenlant* was a part of Asia and not of Europe as usually represented on maps of this period.

Inland from North America, into Ruysch's "Asia" proper, the influence of the medieval imagination is found in the dreaded realm of *Gog and Magog* from which the Antichrist would spring at Armageddon. Originally a Biblical saga, the story of these two malevolent creatures developed a rich mythology through medieval lore. *Gog and Magog* were traditionally imprisoned behind the Caspian gates by Alexander the Great; belief in the menace was so great that the level-headed Roger Bacon hoped that the study of geography might predict when, and from what direction, their onslaught might come in the days of the Antichrist so as better to prepare to defend against them. This threat was quite real to Columbus, who figured himself prominently into the events, believed by him to be close at hand, leading to the end of the world. In the gulf

formed by North America and the ominous land of *Gog and Magog* lies the Spanish Main, the Caribbean, which in Ruysch's mind was really the China Sea. Here the influence of Columbus is profound. Some of Ruysch's inland Asian data was extrapolated from Polo's description of his trip from Peking to Bengal, which he says he made as an emissary for Kublai Khan. Ruysch judges Polo's TOLMA[N], a region later reincarnated in the New World as part of the Northwest Coast, to lie just south of the realm of *Gog and Magog*. South of TOLMA lies the mountainous country of TEBET [Tibet, but actually in present-day Sze-ch'wan and Yün-nan], which "*is terribly devastated, for it was ravaged in a campaign by Mongu Khan . . . many towns and villages and hamlets lying ruined and desolate.*" Polo did, however, "*renew his stock of provisions*" at a region with many populated hamlets, some of which are "*perched on precipitous crags.*"

As regards the continental regions south of Newfoundland, and discovered by the Spaniards and Portuguese, Ruysch was clearly of the opinion that they were entirely distinct from Newfoundland or the pseudo Asiatic country which he had visited and delineated; and that they constituted a new world, as yet imperfectly known, particularly regarding its west coast. This coast Ruysch could not admit to be connected in any manner with as he already depicts in detail the eastern Asiatic seaboard, from the point where they merge with his northern regions, to 39° S latitude, which is the termination of the map. In the south, Ruysch shows the Caribbean basin as separate from Asia, but assumes (as indicted in an inscription in the western Pacific) that *Sipganus/Cipango/ Zipangu* (Marco Polo's Japan) is identical with *Spagnola* (Hispaniola, modern Haiti and the Dominican Republic), thus reinforcing Columbus' belief that the West Indies were very close to Asia. Ruysch's knowledge of the New World, south of Newfoundland, appears to be derived exclusively from another *Lusitano-Germanic* map, according to HARRISSE, who believed that the apparent omission of Cuba was an oversight on the part of Ruysch. The name *C. De Fundabril* on the peninsula extending toward *Spagnola* is suggestive of Cuba as that name was given by Columbus, on his second voyage, to a cape on the coast of Cuba which he left the on the 30<sup>th</sup> of April. On the scroll upon the west coast of this unnamed land is the inscription: "*As far as this the ships of Ferdinand have come*". To the southwest of the supposed island of Cuba is this striking statement: *M. Polo says that 1400 miles to the east of the port of Zaiton there is a very large island called Sipango, whose inhabitants worship idols and have their own king and are tributary to none. They have a great abundance of gold and all kinds of gems. But as the islands discovered by the Spaniards occupy this spot, we do not dare to locate this island here, being of the opinion that what the Spaniards call Spagnola is really Cipango, since the things that are described as of Cipango are also found in Spagnola, besides the idolatry*". The considerable distance from the eastern coast of China adopted for *Zipangu* [Japan] by the geographers of the first part of the 16<sup>th</sup> century depends, according to PESCHEL, on the distance being given by Marco Polo in Chinese *Li* of which there are 250 per one degree of latitude. This Chinese *Li* was by the European cartographers confounded with the Italian mile (60 miles = 1 degree). Most of Ruysch's Asian data comes from Polo's description of his return to the West from China. Marco, Maffeo, and Niccolo Polo, long detained at the pleasure of Kublai Khan, were allowed to return to Europe when sent as the personal escorts of a bride for Arghun, khan of the Levant [Persia]. They departed China from *Zaiton*, seen as a coastal city on the Asian peninsula opposite Ruysch's "Cuba."

From *Zaiton* they travelled "1,500 miles" across a gulf to a country called *Chamba*, which is plotted here slightly inland as CIAMBA. Ruysch designates its coast as *SILVA ALOE* [aloe forest] for the valuable plant which Polo said the king of Chamba offered as part of his annual tribute to the Kublai Khan. Groves of trees yielding a black wood, which Polo said was used for making chessmen and pen-cases, are noted by Ruysch as *SILVA EBANI* [ebony forest]. To the west of these forests lies *LOAC* [Thailand/Malaya]. Sailing seven hundred miles south-south-west from *Chamba* the traveler, says Polo, passes two uninhabited islands, Ruysch's *SODVR* and *CANDVR*. Among the Polean islands lying further to the south on Ruysch's map is *AGAMA*, which like TOLMA would later be transposed to the New World as a region of the Northwest Coast. Mixing Polean, Portuguese, and Ptolemaic data, Ruysch charts a *JAVA MAJOR* and *JAVA MINOR*, Polo's Java and Sumatra respectively. He creates a "modern" Sri Lanka [*PRILAM*] from Portuguese sources but exiles the old *TAPROBANA*, the Sri Lanka or Ceylon of Ptolemy, to the



east, giving it both the old and new names (*TAPROBANA ALIAS ZOILON*), and mistakenly notes the 1507 Portuguese landfall in Sri Lanka by it rather than by *Prilam*. Further east is yet another Sri Lanka [*SEYLAN INSULAE*], spanning the edges of the map. South of *JAVA MINOR* [Sumatra] an inscription refers to an archipelago of precisely 7,448 islands reported by Polo, probably the Philippines but here suggesting Indonesia.



The western bounds of the South American continent remained entirely unknown. In 1507 the Pacific, still simply the "Oriental" or "China" Sea, had never been sighted from the American side and had only been cursorily approached from the Asian side. Ruysch places a ribbon over the west coast of South America with an inscription stating that:

Thus far the Spanish sailors have come, and because of its magnitude they call it a new world, for indeed they have not seen the whole of it nor at this time have

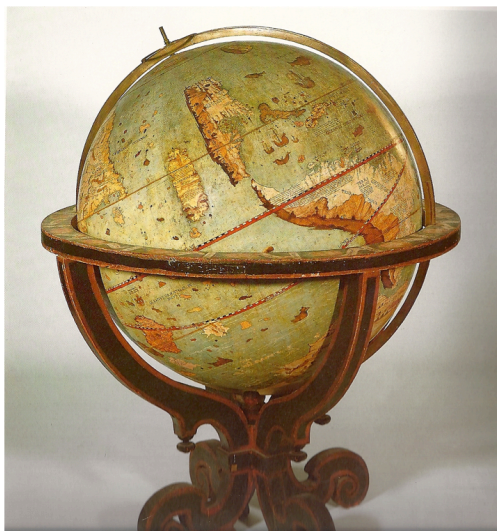


they explored beyond this limit. Therefore this map is left incomplete for the present, since we do not know in which direction it trends.

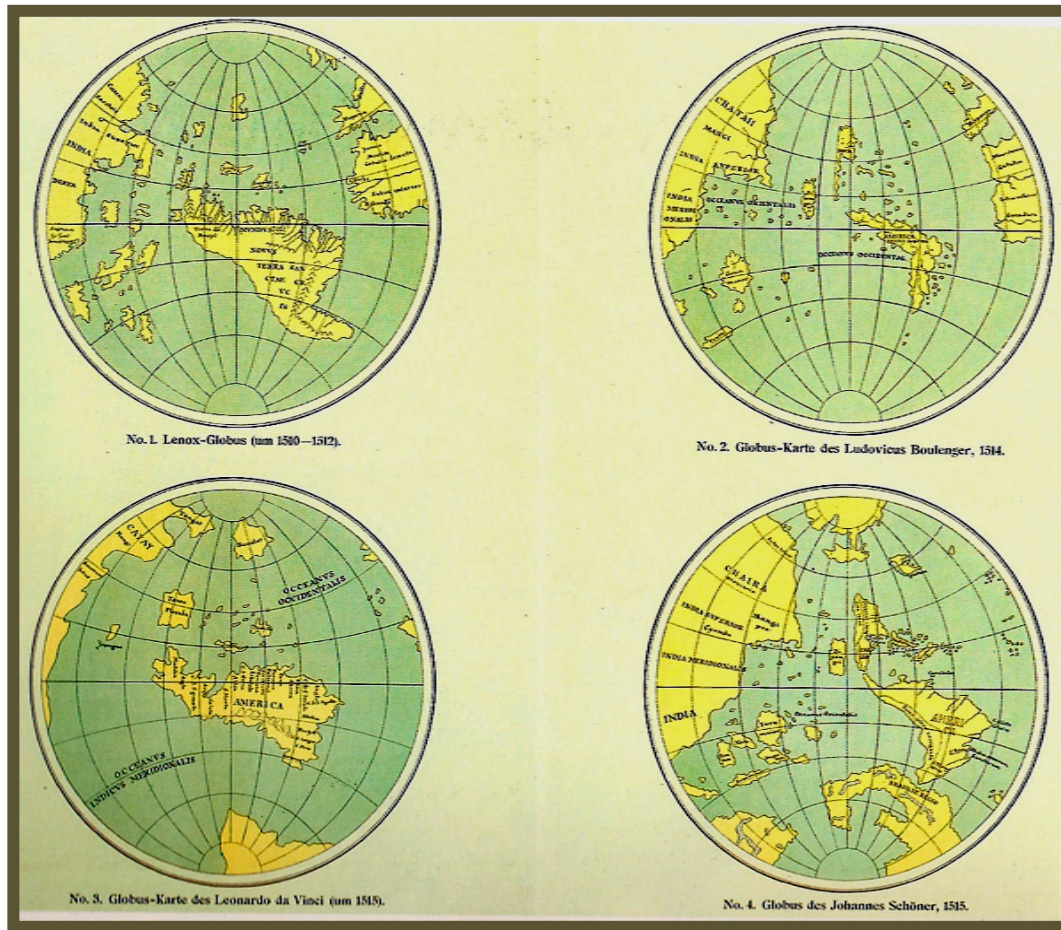
The Portuguese, of course, had also “come this far.” Their discovery of Brazil in 1500 was significant because it was rich in trade potential and because it clearly lay on their side of the papal demarcation line.

As the historian Gregory McIntosh points out, the most fundamental constraint upon the design of the maps by Contarini (#308) and Ruysch is the 180-degree limit of the known world, the *oikoumene*, [known inhabited world], proclaimed by Ptolemy as the extent of ancient classical geographical knowledge. As conceived in the late-15<sup>th</sup> century, the Old World started at the prime meridian in the *Fortunate Islands* (Canaries) and ended to the east at 180 degrees in Asia in the middle of the great *Martellean* peninsula (This cartographic peninsula has also been called the *Tiger Leg* or *Dragon’s Tail* peninsula, see #256) where the Ptolemaic place-names cease. Though Contarini and Ruysch, of course, modify the Ptolemaic Old World with much more modern information, e.g., South Asia, it is still fundamentally an image of the world governed first by the 180-degrees of the *oikoumene* of Ptolemy.

The entire surface of the right-hand plate of the Contarini and Ruysch maps is devoted to the depiction of the standard, traditional, 180 degrees of Ptolemy’s *Geography*. The left-hand plate of the Contarini/Ruysch maps is devoted entirely to the New World, that is, *Extra Ptolemeum*, beyond Ptolemy’s *Serica*, *Extra Imaum* Mountains, *India Extra* Ganges River, and the *Sinus Magnus*, to include the lands reported by Marco Polo — *Cathay*, *Mangi*, and the thousands of Spice Islands in the Oriental Sea — plus the additional new lands and islands to the west of Europe, beyond the zero longitude of the *Fortunate Islands*, beyond the old knowledge of Ptolemy, newly found and mapped by the Portuguese, Spanish, and English. The entire trans-Ptolemaic portion of Asia, that is, the eastern half of the *Martellean* peninsula and the coast of East Asia, has an almost exclusively Polian nomenclature. Though many have commented upon Ruysch’s joining Newfoundland to Asia on his map, it is not to the Asia known to the ancient Greeks but, rather, that of Polo, still part of the “New World” on the other side of the world, beyond 180 degrees east. Everything in the “other” 180 degrees beyond and outside the traditional Ptolemaic Old World was the “New World.” Grouping all post-Ptolemaic lands and seas together resulted in an even, symmetrical division of the world into Ptolemaic and ultra-Ptolemaic halves.



*The Johannes Schöner terrestrial manuscript globe, 1520, western Hemisphere  
Germanisches Nationalmuseum Nürnberg*



Redrawings of four globes: the Lenox (1510), the *Universalis Cosmographie Descriptio Solido Quem Plano Tam In* (a.k.a. Tross globe gores) by Louis Boulenger (1514), the Leonardo da Vinci globe gores (1514) and the 1515 globe by Johannes Schöner.

All of these early post-Columbian/pre-Magellan cartographic efforts indicate a belief in a total separation of the newly discovered lands and the continent of Asia, however, as can be clearly seen, the newly discovered lands were placed extremely close to *Zipangu* [Japan] and Asia. On the *Lenox* globe (#327), in the place of North America, there are scattered islands, one of which, located near the northwest extremity of *Terra de Brazil*, bears the name *Zipancri* [Japan], and one in the far north, but unnamed, clearly resembles the Cortereal region, as it appears on the *Cantino* and *Caveri* maps. According to the historian Henry Harrisse, in the “alleged” *da Vinci* globe gores the large island west of the *Terra de Brazil* may have been originally *Zipancri*, while *Zinpangri* on the *Lenox* globe (#314) may have become the *Terra Florida* of the *da Vinci* globe gores.

As can be seen above in Schöner’s 1515 globe, and up to the Schöner’s globe of 1520, Schöner had shared the opinion of all cosmographers regarding the separation between Asia and the new discoveries believed to exist, and clearly depicted in the Lusitano-Germanic maps and spheres, between the New and the Old World, and which he had been propagating with the utmost zeal. But the *Epistle of Maximilianus Transylvanus* caused him to alter his views entirely in that respect. By what process of reasoning he came to consider that the discovery of the new route to the Moluccas proved the existence of an absolute cosmographic connection between America and Asia is a mystery to us. That egregious error is set forth in the *Opusculum* of 1533, but it dates from 1523, as can be seen in the third of the following extracts.

Schöner first identifies Mexico and its surrounding regions with Quinsay, after locating them in Upper India:

*"Unde longissimo tractu occidentem uersus ab Hispali terra est, quae Mexico et Temistitan uocatur, in superiori India, quam priores uocauere Quinsay id est ciuitatem coeli eorum lingua"* [By a very long circuit westward, starting from Spain, there is a land called Mexico and Temislilan in Upper India, which in former times was called Quinsay; that is, the City of Heaven, in the language of the country.]

Then, criticizing opinions ascribed to Vespucci, Schöner says:

*"Yet Americus Vespucius, in ranging in his navigation the coasts of Upper India, from Spain to the West, thought that the said part, which is connected with Upper India, was an island, which he caused to be called after his own name. But now other hydrographers, of a more recent date, have found that that land [i. e., South America] and others beyond, constitute a continent, which is Asia; and thus did they reach as far as the Molucca islands in Upper India."* ...

And to show in a still more forcible light Schöner's geographical ideas concerning the alleged complete connection between America and Asia, as well as the real source of his belief on the subject, and the time when he conceived such a notion, we cannot do better than reproduce the whole of his most surprising account of the newly-discovered countries.

*'Concerning the regions outside Ptolemy.*

*The regions which are outside Ptolemy's description have not been transmitted to us by authorities not quite as certain, nor have they been described with as much care. At the east, all that which is beyond the country of the Chinese and 180° longitude, has remained entirely unknown to Ptolemy. But after Ptolemy, beyond 180°, towards the east, numerous regions have been discovered by one Marco Polo, a Venetian, and others. And in our days the Genoese Columbus and Americus Vespuccius reach those shores, after having sailed from Spain across the Western Ocean, and visit them, thinking that this part of the world is an island. They called it America, the fourth part of the globe. But very lately, thanks to the recent navigations accomplished in the year 1519 A.C., by Magellan, the commander of the squadron of the invincible Emperor, the divine Charles, &c., towards the Molucca islands, which some call Malaquas, which are situate in the extreme east, it has been ascertained that the said country [that is, America] was the continent of Upper India, which is a portion of Asia, where are immense kingdoms, great rivers, and numerous marvels, which we have described above, at least partially. Here are the countries of that region, viz.: Bachalaos, thus called from a new species of fish. There is also the Bergi region, a large flowery country; the desert of Lop and the city of the same name, in 213 20, 43°; the province of Tamacho; Sucur; Sampa or Zampa; Cavul; Tangut; Cuschin; Cathay, also called Chulmana; the province of St. Michael; Messigo, which is the country of Mexico, the principal city, situate on the shore of a large lake, is Temistita, in former times called Quinsay, by 226 20, 21° longitude; the Raylmana and Zebequi countries; then, towards the west, Temiscanata, Parias, Darien, Urabe, Pariona, the Cannibals, and innumerable other regions.*

And Schöner did not limit himself to printed explanations; he constructed globes to make his opinion clearer, one of which was made in 1533 (#328), for the Prince John Frederick of Saxony, where the two worlds, Asia and America, in accordance with those geographical ideas, are completely blended together, north of the equator, while Mexico is exhibited as a dependency of Cathay. The consequences of those facts are twofold:

If Schöner altered his graphic representations of Asia and America for the first time in the globe of 1533, then the globe of 1523 must have exhibited north of the equator the insular configurations of the globe of 1520, and continued therefore to disconnect *Parias* and North America from the South American regions.

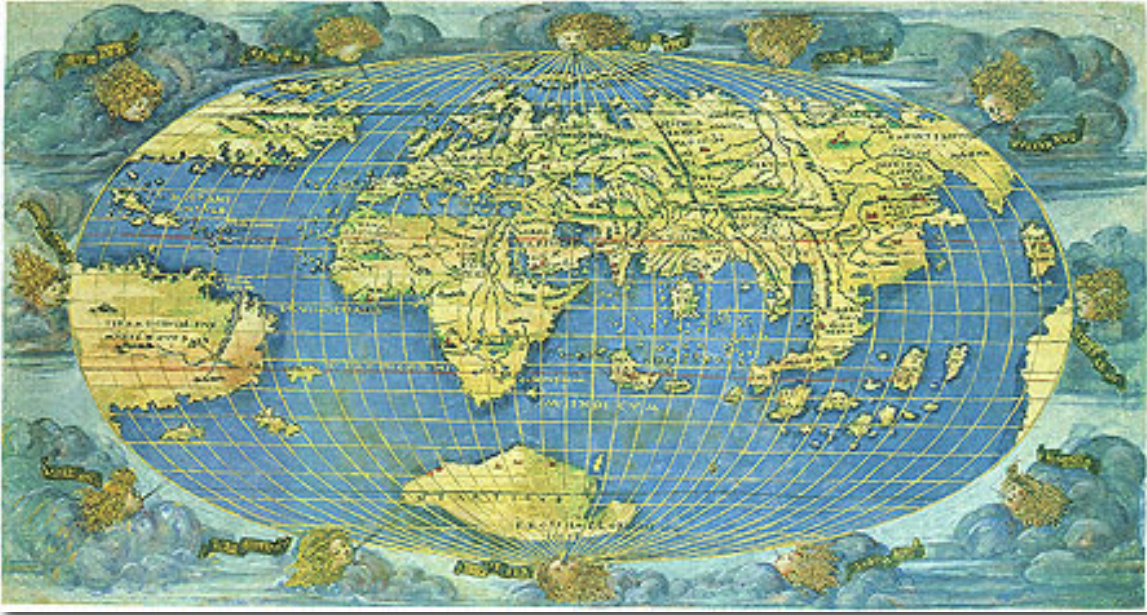
If, on the contrary, Schöner introduced at once in his globe of 1523, the geographical notions which he expressly says he derived from the account of the voyage of Magellan, then that globe must have connected America with Asia precisely as it is between the equator and the tropic of Cancer in the globe of 1533.

In a small tract dated 1523 Johann Schöner (#328) refers to his globe and says that it was copied from a model that he had received from the Spaniards. In another tract, written in 1533, he stated that he had united America with Asia because Magellan had reached the Moluccas, which according to Schöner were in *Upper India*. The conclusion seems a bit forced, and it is more likely that he was impressed by the stories current about the riches discovered by Cortes and connected them with the traditional ones of *Cathay* described by Marco Polo. There may be another reason. When the Magellan survivors returned, they gave out very erroneous information about the distance from the Strait of Magellan to the Moluccas. The only detailed diary of the expedition which we now have is that of Francisco Albo. He states that the distance in longitude between the mouth of the Strait of Magellan and the first islands in the Philippines was  $106^{\circ} 30'$ . The Ladrones were three hundred leagues farther to the east. Now on the 1524 globe we find Cape Deseado in about  $306^{\circ}$ , while the  $200^{\text{th}}$  meridian runs exactly through the easternmost islands of the Philippines, plainly indicating that the map was based on Albo's calculations. The Ladrones we find to the east between  $220^{\circ}$  and  $225^{\circ}$ , that is, almost four hundred leagues, calculating seventeen and a half to the degree, but the maker of the globe may have figured less. Having made these locations and being also informed that Mexico was in about  $225^{\circ}$  E (at least so we judge from the map), Schöner could hardly have reached any other conclusion than that Mexico or New Spain must be a part of Asia. The erroneous location of Mexico, more than fifty degrees too far west, gives us the reason for this error. If the city had been placed by his informant in its approximately proper position Schöner would probably not have changed his opinion from that held earlier, namely, that Asia and America were separated.





Reproduction of Schöner's 1533 "Weimar Globe" (from HARRISSE) showing the "integration" of the new discoveries (America) with Asia (#328)



*World map by Francesco Rosselli, 1508, 14.5 X 28.5 cm (#315)*

This Rosselli world map is among the earliest printed maps that depicts the New World. Further, it is an essential source for Christopher Columbus's fourth voyage (1502–1504), since Rosselli has located on the eastern coast of Asia the New World discoveries made by the explorer during that voyage, in accordance with Columbus' belief that he had been on the coast of Asia. Also, it is the earliest non-Macrobian map (#201) to depict a hypothetical southern continent, long before the discovery of Antarctica. Having determined to show the entire globe in one image, Rosselli had to determine the relationship between the lands described by Columbus, Vespucci and Cabot, and the traditional image of Asia. Rosselli improved the configuration of North America while still displaying its attachment to Asia. Newfoundland appears at the upper left as the easternmost limit of Asia. The West Indies are shown below, with Cuba shown as an island, and below that is a South American continent labeled *Mundus Novus*. Except for the new discoveries in the extreme northeast, the Asian delineation is mostly derived from the classical productions of Ptolemy with some additions from Marco Polo. The central meridian crosses Russia, East Africa, and Arabia, an inconvenient division of the world for following the new discoveries. In his fourth voyage of 1502–03, Columbus had explored the coast of Central America, designating many place-names. These names appear in Rosselli's map at the lower right, along the Southeast Asian coast. The island on the extreme right edge of the map is Japan. The island on the extreme left edge of the map is Japan.



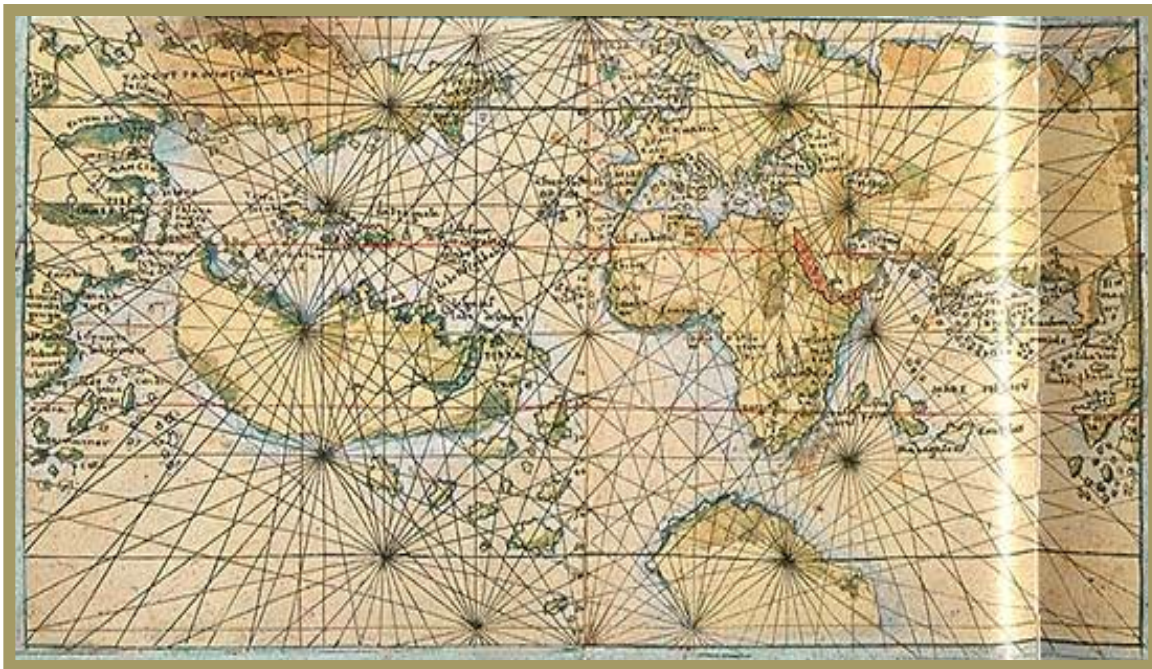


Bernard Sylvanus 1511 world map, from Jacob Pentium's edition of Ptolemy's *Geographia*, 56.5 x 41.5cm, illustrates an unfinished east coast of Asia and the new discoveries (#318)

Notice that on Sylvanus' map the eastern coast of Asia is left open and the area labeled *regalis domus* among the new discoveries is open to the west. Geographically, while one of the very earliest printed maps to show any part of the North American continent, Sylvanus is still less advanced than his immediate predecessors. The vigorous style of engraving gives prominence to ranges of mountains and rivers: these (after Ptolemy) are usually named and there is little space left for the names of localities. For instance, in the whole of continental Europe there are only three names: *magna germa*, *Italia* and *dalma*. South America, of which the western coast only is shown, is titled *Terra Sanctae Crucis* but it contains none of the place names carefully recorded on Ruysch's map of 1508. *Terra cubæ* and *Hispaniola* appear similar in shape to that displayed on Cantino and all the other maps Harisse refers to as the *Lusitano-Germanic* group. However, while further north, there is no indication of the Florida peninsula and the island *terra laboratoris* is so misplaced that it is situated only a few degrees west of Ireland. This is presumably a reference to Newfoundland or the North American coast. Beyond is the suggestion of a land *regalis domus* whose western coastline is left open, as is the whole eastern coastline of Asia at the other extremity of the map. The delineation of the Asian coast using the "Tiger Leg" configuration carries on the tradition also employed by the Behaim globe, and the Martellus, King Hamy, Roselli, Waldseemüller, and Contarini maps. The "Tiger Leg" is *Catigara* which was the name given on earlier Ptolemaic maps to the land on the easternmost shore of the *Mare Indicum*, south of the equator. In the Caribbean, just west of Cuba and *Hispaniola* (but on the other end of the map) lies *Zampagu Ins* [Japan]. To find a pattern for his map's Japan, Sylvanus apparently looked to the Ruysch world map of four years earlier. Ruysch did not show Japan, but rather explained



in an inscription that he believed Japan to be the same as one of the islands recently discovered by the Spanish in the Caribbean. Although Ruysch indicated *Hispaniola* as that which he believed to be Japan, he placed an unidentified island - or part of a northern promontory of a continental Cuba as per Columbus - to the west. For Sylvanus, it was much more sensible to adopt that homeless island as Japan, rather than *Hispaniola*, because it as yet had no identity, and because it was in the position of Cuba, which Columbus himself had once said was really Japan. Thus Sylvanus transplanted Ruysch's uncommitted Cuba to be the "true" Japan, salvaging it from Ruysch's confused Caribbean. Sylvanus left the eastern shores of Asia and the western bounds of the Corte-Real's North America open, thus allowing for the possibility that they were contiguous. Although he also leaves the north coast of Japan undefined, his designation of that land as *ins[ula]* seems to make clear that he did not envision it connecting to the Asian mainland. No ambiguity whatever is found with *GRVENLANT* [Greenland], which Sylvanus integrates fully into the Asian continent, placing it due north of *CA TAI REGIO* [Cathay].



World map by Francesco Rosselli, ca. 1508, in the National Maritime Museum, Greenwich, England, the China Sea and the Caribbean are portrayed as one and the same sea. (#315)





*Atlas Miller: Planisphere World by António de Holanda and Lopo Homem, 1519 (#329.1)*

This curious and most strange *mappamundi* (of obviously Ptolemaic influence) serves as the frontispiece - and which displays the curious geographical conception that, on the planet Earth, the land is larger than the sea, and totally envelops the water, as if transforming the sea into one big pond, or "stagnon" (instead of the sea enveloping the land). The Ptolemaic influence is clearly displayed by the land bridge that connects the new discoveries in the West with the Asian continent. Ptolemy used a similar land bridge to connect Africa to Asia creating an inland sea out of the Indian Ocean.



*Giovanni Vespucci world map, 1523 (#335)*

This map shows a clear separation between the old and new worlds and the potential extension of the Pacific Ocean. By far the most interesting feature however on this extremely curious *mappamundi* is the representation of the huge continental land in the southern hemisphere. It bears a name that at first sight appears ridiculous, for *Gataio* is meant for *Cataio* [China]. China is certainly a strange name for Australia, but in a cartographical sense not altogether impossible at the period we are dealing with, for we must remember that this *mappamundi* was constructed before the return of the first circumnavigators, when the Pacific Ocean to the east of the Spice Islands was not yet known.



*World map by Juan Vespucci, 1526, 85 x 262 cm (#338)*

This map also shows a clear separation between the old and new worlds and the potential extension of the Pacific Ocean. The map is large enough that, unlike other maps of the period, does not avoid the issue of the areas north and south of Eurasia and the New World. The mapmaker clearly believed that Asia was separate from the new discoveries. A very similar example is that of Diego Ribero's 1529 large world map, known as the *Propoganda*, or *Second Borgian map* (#346).





America about the Tropic of Capricorn. The following is an excerpt from the *De Orbis Situ*, in translation:

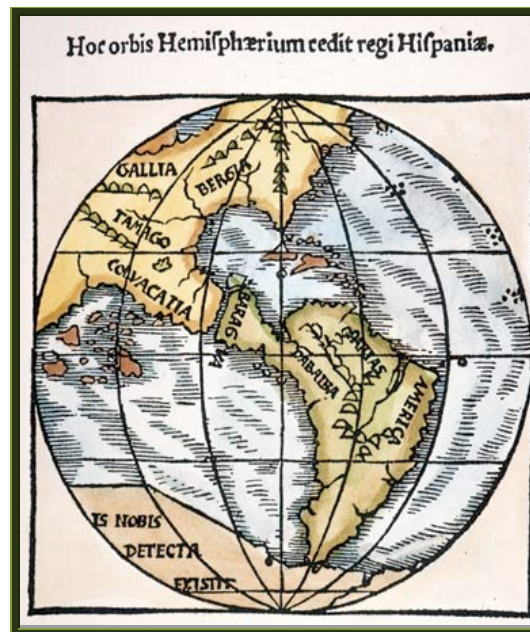
Then we have Marcus Benevent. Although he pretends to have taken into account the new discoveries and data, and to have endeavored to complete and correct diverse accounts of voyages, I do not share his opinion; for he exhibits the sea as separating the lands situated beyond the zone of the Capricorn from the regions lately discovered. The majority of people entertain the same belief relative to the western countries recently found, which they think are separated from the eastern regions by a sea. I hold a contrary opinion, and in the present description, I demonstrate that all navigations which start from the west, lead to the eastern countries, and that, in general, Asia, Africa, Europa, and particularly the Culvacanian India [that is, the country discovered by Hernando Cortes], as well as at the north, Sweden, Russia, Tartaria, the Baccalaos and Terra Florida, all of which [although] vast regions separated by very great distances, are connected with each other by a continuous tract of country, and an uninterrupted route; and that America itself is joined to the eastern regions and to Calvacania; though the latter fact is not yet proved absolutely. Perhaps this is not today unknown to the Spaniards.

In other words, Franciscus Monachus rejects the configurations set forth by the *Lusitano Germanic* tradition, and especially as expressed by Ruysch in his *mappamundi*; furthermore Monachus reproves Ruysch for separating North from South America in the latitude of the Tropic of Capricorn; and for placing an ocean between the west coast and the Asiatic regions. He further says that this disconnection between the two American continents, and the existence of a sea between the New World and the Old, are notions shared by the majority of people. The erroneous idea that America was only a prolongation of Asia, sprung, according to the scholar HARRISSE, not only from Columbus' initial proclamations, but also from Peter Martyr's descriptions, which Monachus at once interpreted as proving that the countries lately discovered by Cortes were not only connected westward with the Old World, but also at the north with the Baccalaos. As to the identity existing between those new regions and the east coast of Asia, in the opinion of the Belgian monk, it is an absolute fact that:

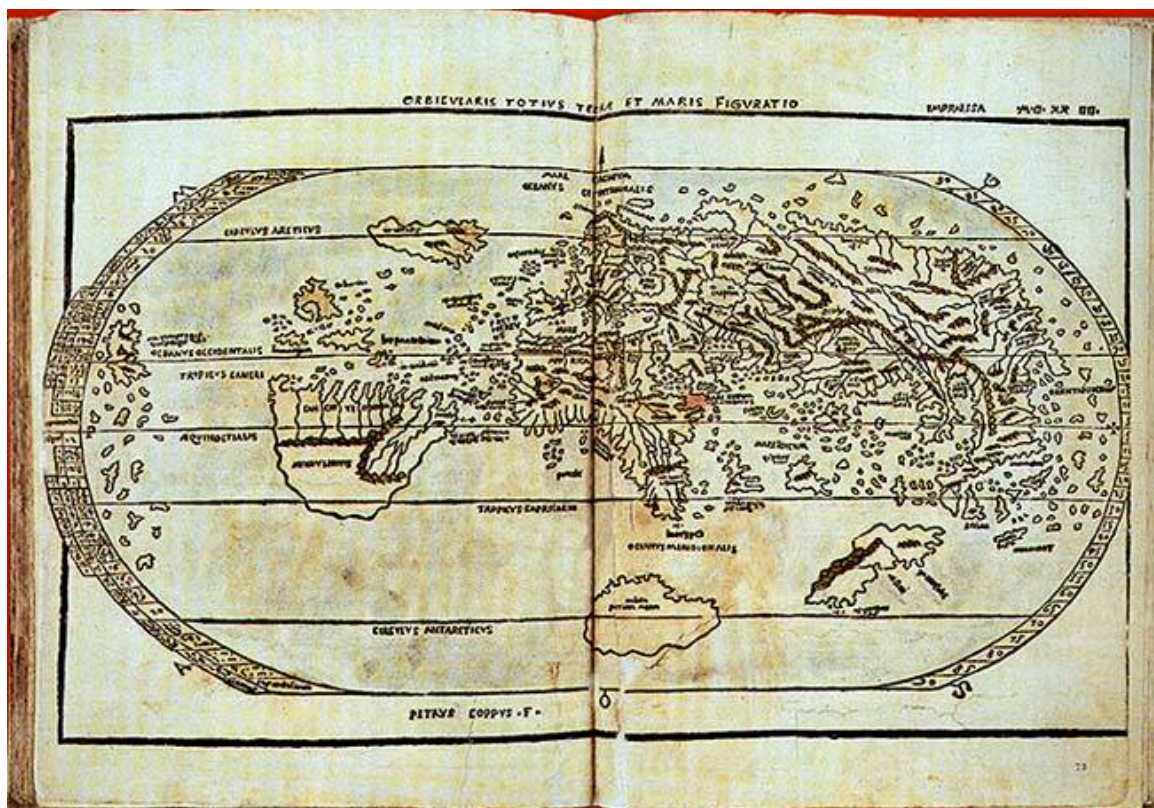
The Culva or Culvacana of Hernando [Cortes] is the province in which is situated the residence of the Emperor of the East. In other accounts of voyages, it is also called Cataya or Catay. Its modern name is Themistetam, or Tenostica, formerly Quinsay, which Odoric calls Themisan. This author is nearer the truth.... North of Culvacania spreads Thamacho, formerly called Tangut. In former times, Tevis was known as Tebet or Cibet. The name of the province of Messigo, was celebrated when the ancestors of Mansus were living. We now understand why Mexico, in the family of maps initiated by Franciscus Monachus, forms part of the Asiatic world, and is placed between Cathay and Mansi, adjoining Tamacho and Tangut.

The western hemisphere contains nine names, two of which belong to Asia, viz.: [*Mon*]gallia, and *Bergia*, which is the *Bargu* of Marco Polo, placed by the Venetian traveler in the northeastern extremity of *Cathay*. The others are *Tamago* [Tamaho], *Covacala* [Calvacania, a name borrowed from Anghiera's account of Yucatan], *Barag* [*Veragua*, from Columbus' fourth voyage near present-day Panama], *Dabaiba*, and *America*.





*De Orbis Situ ac descriptione, 1530 (#337)*



*De Summa Totius Orbis by Pietro Coppo, 1524, 8x13.5 cm (#341)*

With respect to his world maps, Coppo shows very little evidence of the latest discoveries in the New World compared to other maps drawn in the 1520s. While the new discoveries are clearly separated from the Asian continent, *Cipango* [Japan] is still being displayed

very close to the Caribbean. There is very little of the discoveries in what is today North America, only a portion of the Newfoundland/Labrador region from the Corte Real brothers and John Cabot. South America is not representative of any of the on-going explorations by either the Portuguese or Spanish. The delineation of the Asian coast using the *Tiger Leg* configuration carries on the tradition also employed by the Behaim globe, and the Martellus, King Hamy, Waldseemüller, Roselli, and Contarini maps. The “Tiger Leg” is *Catigara* which was the name given on earlier Ptolemaic maps to the land on the easternmost shore of the *Mare Indicum*, south of the equator. Most interesting are the two large “islands” – one south of the African continent, the other south of the Indian Ocean.



*The Paris Green (Quirini) Globe, 1515-1528 (#342.1)*

This globe shows North and South America, with the name *America* appearing four times (twice on each continent); note the multiple “passages” to *Cipangu* [Japan] and the un-named Antarctica. Reminiscent of the Waldseemüller 1507 map in its depiction of the New World discoveries with *Cipangu* located close to North America.





*A drawing of the Western Hemisphere on the Noua et integri universi orbis descriptio known as the Paris Gilt or De Bure globe, 1528, 23 cm diameter (#344)*

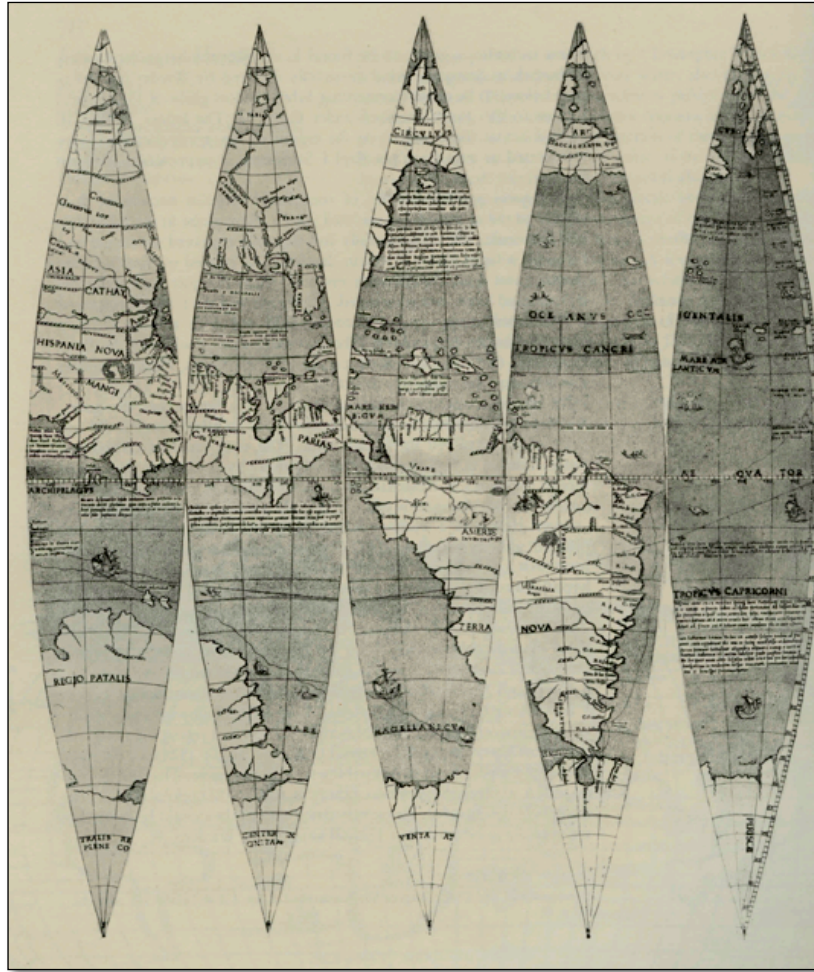
Note the joining of the New World discoveries with *Cathay* [China] (near the Gulf of Mexico) and Japan and the Yucatan are considered one and the same in this *Paris Gilt* globe. Also displayed is Magellan's historic circumnavigation route.

A feature to be noted particularly in this globe is the joining of the New World discoveries with Asia, north of the equator, precisely as they appear on the diminutive hemispheres of Franciscus Monachus, and as has been inferred from Schöner's description of his own globe of 1523 (#328), initiated in the latter. This resemblance makes it incumbent on the scholar to ascertain the origin of that peculiar configuration in the *Paris Gilt* globe. In other words, was the globe, now lost, which Schöner constructed in 1523 the prototype of the *Paris Gilt* globe? When constructing the globe of 1523, Schöner gives us clearly to understand that his new geographical ideas were limited to the regions south of the Tropic of Cancer, and in the west, where he thought that America was joined to Asia; thus making the two worlds only one continental landmass. This, necessarily, led him to connect, on the Atlantic side, the vast countries that he had theretofore depicted as separate, and to set forth an unbroken line of coasts



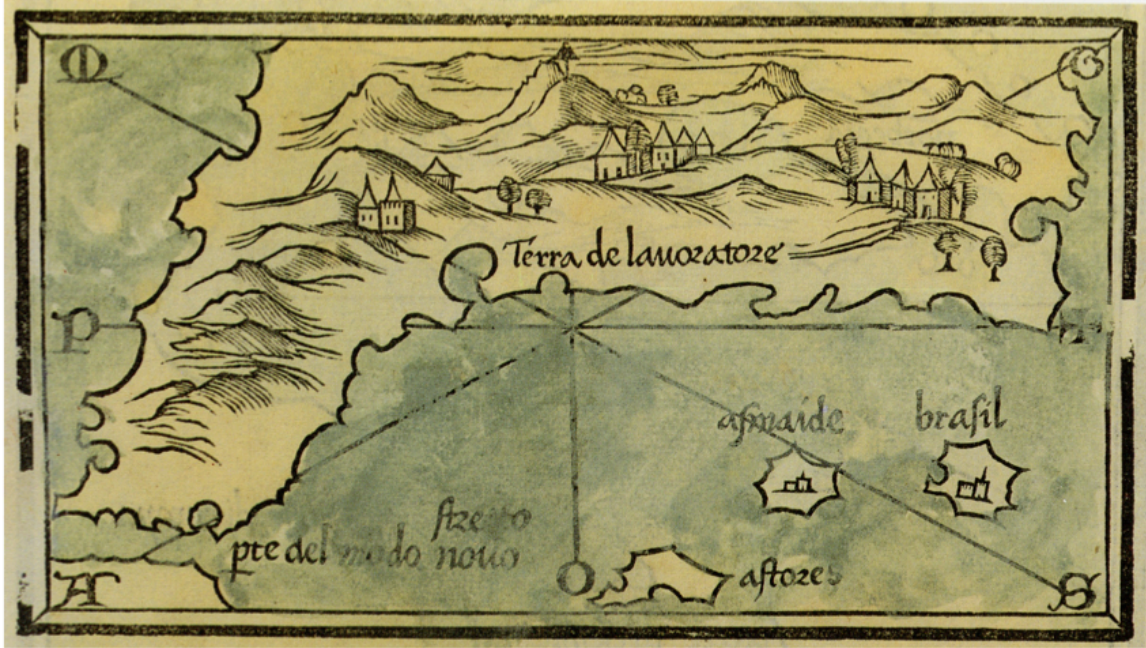
from Labrador to the Straits of Magellan. The *Paris Gilt* globe became the progenitor of an important series of globes and cordiform maps, such as Schöner's globe of 1533 (#328), the *Nancy* globe of 1535 (#363), the *Paris Wooden* globe of 1535 (#357), and the single cordiform map of Orontius Finaeus (#356). In all of these "derivatives", in their overall aspect, North America is an integral part of Asia, forming a vast nonexistent continent that is best designated as Amer-Asia, or Amer-Eurasia. As with the *Paris Gilt* globe, the Atlantic coastline of this continent shows the continuity and general features of North America from Florida to Cape Breton, and the Newfoundland area as traversed and recorded by Verrazzano in 1524, omitting, again, any indication of the false *Verrazzanian Sea*. Their makers could not, of course, reconcile the existence of a great gulf giving access to *Cathay* with the fact that *Cathay* was shown on their productions as an area west of Florida and integral with it, accessible by overland journey from the Atlantic, or more easily, by sea from the Gulf of Mexico. Though they showed the *Verrazzano* coast they had misunderstood its significance in world geography. Verrazzano had believed and affirmed that his new land was in no sense a part of the Asian continent. The anonymous globe makers, as well as Franciscus Monachus, Orontius Fineaus, and others of the period, presented a direct contradiction to his conclusion as to the separateness of the continents.





These anonymous globe gores are of considerable interest because of their affinity to the unsigned and undated *Paris Gilt/De Bure* globe in the Bibliothèque Nationale, Paris. They are carefully and elegantly engraved on copper and represent a large globe 35 cm in diameter. The style and the features portrayed are consistent with a date of around 1535 and with a south German source, possibly Nuremberg. The craftsman-artist could well be from the school of Schöner, a likely candidate being Georg Hartmann who was active in Nuremberg at that time. As on the *Paris Gilt* globe, Magellan's circumnavigation is marked as a line across the gores, which portray the Moluccas and Pacific Ocean in relation to the old and new worlds explored up to that time. The west coast of central and south America is well defined, probably more by guesswork than actual report: the straits of Magellan are so named as is the sea *Mare Magellanicum* to the east. America is still joined to Asia and in the process Japan — shown clearly as a midway island on many earlier maps — is now omitted, although another island *Iucatane Zipangris* is placed in the Caribbean just off Mexico. To the south, a huge southern continent is hypothesized, even more extensive than that appearing on earlier globes or maps such as those by Schöner or Monachus. This land is marked *Terra Australis Recenter Inventa At Nondum Plene Cognita* [Southern Land recently discovered but not yet fully explored], perhaps recording Portuguese discoveries that may have taken place in the 1520s.





North America, Benedetto Bordone, Venice, 1528, from Bordone's *Isolario*.

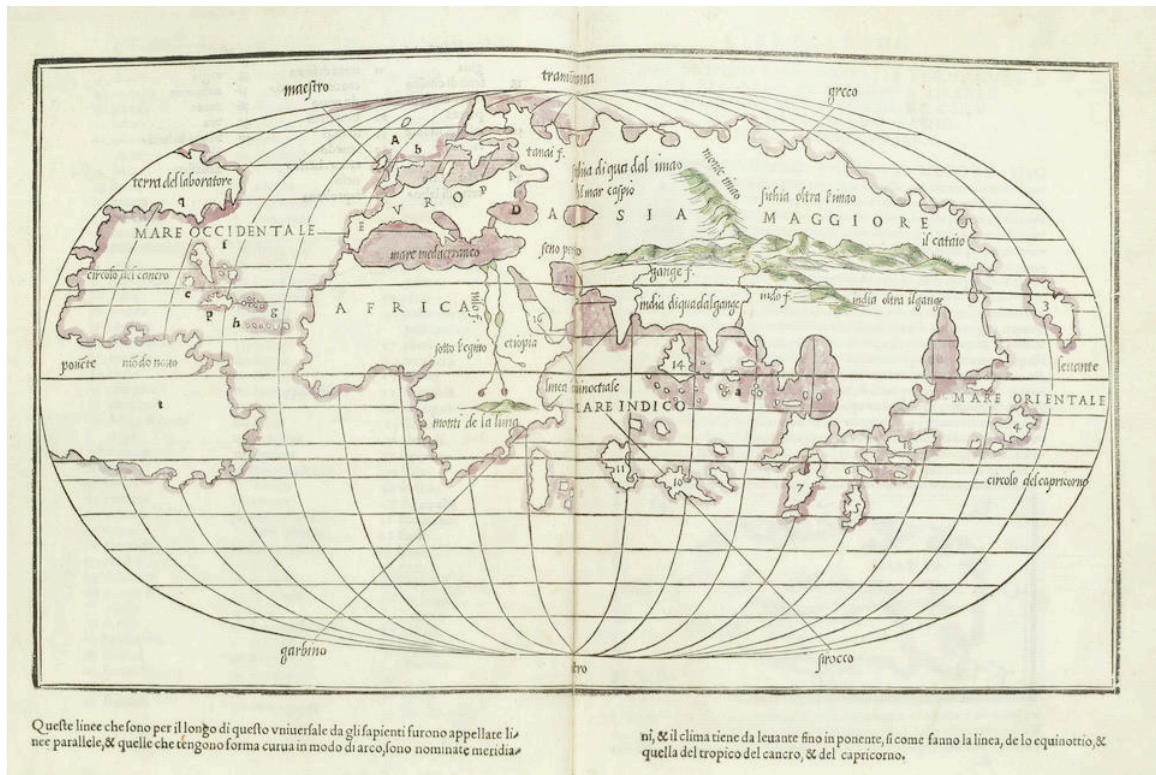
One type of navigational aid commonly used by pilots sailing Mediterranean waters was the *Isolario*, a book containing descriptions and maps of the sea's islands. The first printed *Isolario* appeared in 1485; that work, by Bartolomeo dalli Sonetti, was limited to the Aegean islands. The second printed *Isolario* was Bordone's work of 1528, which attempted to chart the islands of the entire world. North America, vastly undersized and severed from South America by a strait, figured logically into Bordone's compilation of the world's islands. This is the first printed map specifically of North America.

Bordone's "island" of North America bears the single label of *Terra de lavoratore* (i.e., Labrador). The term comes from *el lavrador* [the farmer], a nickname for a Portuguese Azorean adventurer by the name of Joao Fernandes. Fernandes may have tried his luck at western voyages under the Portuguese flag as early as Columbus had under the Spanish flag. At the turn of the century, however, Fernandes immigrated to England and quickly secured letters patent from Henry VII for the discovery and possession of new lands. Two theories might explain his sudden change of allegiance: in Portugal he may have been outranked by the more lavish Corte-Real brothers in securing rights to any lands discovered, or rather Fernandes might simply have been enticed by a better offer from Bristol merchants. Sailing in 1501 under his new privilege from Henry VII, he is thought to have discovered Labrador, with use of his nickname to denote the region dating as early as 1502 (It is found on the *Cantino* portolan (#306) chart of the world made for the Duke of Ferrara in 1502.). His true landfall has long been disputed, however, and some historians argue that he reached Greenland rather than any part of America. This contributed to the mis-identification of the present Bordone map as other than North America; e.g., Leo Bagrow (*History of Cartography*, p. 64) refers to this work as a map of Greenland. A cavalier attitude on the part of some early mapmakers has only compounded the issue, as Labrador is sometimes found as a wedge-shaped trace of land above America, later being assimilated into the American continent itself. Bordone's map offers nothing to the unresolved issue of what shores Fernandes reached.

That Bordone's little map of *Terra de lavoratore* is the North American "continent," not self-evident from its geography, is demonstrated by two points. The simpler is by its context in Bordone's world map in the same *isolario*. Perhaps even more



convincing is the term *stretto pte del mondo novo* found at the southern extreme of our *Terra de lavoratore*, the “new world” with which it shares the strait clearly referring, at this time, only to South America (and as South America is in fact designated on Bordone’s world map). However, although the landmass is functioning as an autonomous North America, its geography is rooted in a primitive depiction showing North America as eastern shores of an elongated eastern Asian coast. Bordone has taken such an earlier map, extracted its “AmerAsian” section, and added an arbitrary western coastline to complete it. The two Rosselli world maps of circa 1508 are likely candidates (see illustrations above). Geographically, they both show an ancestral connection to Bordone’s, and in fact Bordone copied the projection of Rosselli’s oval map for his world map. And Rosselli, like Bordone, designated all of the North American discoveries after João Fernandes.



World map by Benedetto Bordone, 1528

Little, if any, true North American geography has been incorporated into Bordone’s originally Asian landscape. There is however a possible, paramount exception to this. Just to the left of the word *Terra* is a large bay and flat east-west coast which closely resembles the depiction of New York Bay and southern coast of Long Island following Verrazano which is found on the 1548 *Tierra Nueva* of Gastaldi and the 1556 *La Nuova Francia* of Ramusio (#393). Although Bordone’s use of Verrazanian data by 1528 is conjectural and in fact quite unlikely, the similarity of these features to those on the Gastaldi/Ramusio maps is striking, if coincidental. The map is, for example, peculiarly void of any trace of the Florida (or pseudo- Florida) peninsula already found on other printed maps for two decades. In any case, the narrow section of North America above the *Stretto pte del mondo novo* corresponds roughly to southern North America (lying at 35° north latitude), and the *stretto* itself is approximately in the region of Mexico where Cortes and Garay had hoped to find one, and indeed where some earlier maps timidly alluded to one. The lower border of the map is drawn along the Tropic of Cancer.

In the Atlantic, Bordone has abandoned scale to allow him to include Fernandes' native Azores, and the fabulous island of *Brasil* from old Irish legend. The other island shown by Bordone, *Asmaide*, has not left such a rich history as *Brasil* island, but it is also found near *Brasil* on other maps, such as the 1513 *Terre Nove* of Waldseemüller (#320).



*Girolamo de Verrazzano world map, 1529, 127.5 x 255 cm (#347)*

Here is another early map that clearly shows a belief in the separation of America and Asia. Also this map displays the feature that changed the maps of America and affected the direction of exploration for decades to come. During the thirty years after Columbus' first voyage, the Spanish, British, and Portuguese were actively exploring the New World. France, however, the fourth European maritime nation, remained uncharacteristically quiet regarding overseas exploration until 1523 when an Italian brought the French flag to North America. In Lyon a well-entrenched enclave of Florentine bankers and merchants imported luxury goods from the Orient. They knew the traditional overland routes of European trade with Asia through the Levant could not bear the competition of Portuguese imports coming by sea around the Cape of Good Hope. Furthermore, if Spain reached the Far East by sailing directly westward to China, the Florentine merchants at Lyon would lose their trade altogether. The solution was to search for a sea passage that allowed its discoverer to control trade with the Orient. A group of powerful and wealthy Florentine Lyonnaise agreed to sponsor a voyage westward in search of a route to *Cathay* [China]. They engaged Giovanni da Verrazzano, a Florentine pilot, to lead the enterprise, but needed the authorization of the King of France, Francois I, who had been occupied in regional warfare and in developing a brilliant court, found his treasury in need of immediate funds. He promptly approved plans for the proposed westward voyage. In January 1524, Verrazzano and his fifty-man crew set off in their 100-ton caravel. They returned to Dieppe six months later. Their first landfall was near today's border of North and South Carolina. As this area appeared impenetrable, they proceeded northeasterly in their search for the passage through to the Orient. After passing Cape Fear and Cape Lookout, Verrazzano sailed the long reaches outside the Outer Banks of North Carolina. He sighted Cape Hatteras and continued northward, traveling the 150 miles around Pamlico and Albemarle Sounds. The large body of water inside the Outer Banks was visible from the ship but no inlet was found. During this run Verrazzano reached the incredible conclusion that Pamlico Sound was a great sea connecting directly with the ocean whose western shore was *Cathay*. This dramatic feature of the Verrazzano map is this

vast nonexistent protuberance of the Pacific Ocean that appeared as the *Sea of Verrazzano* on maps and globes for over fifty years. The now famous ‘western sea’ that bisects present-day North America has no name or inscription actually on the map itself, nor is it mentioned in Giovanni’s letter to King Francis I. However, on latter maps such as Michael Lok’s in 1582 (#419), it is called *Mare de Verrazana*. Opposite the believed narrow isthmus between *Mare Indicum* and *Mare Oceanum*, at 40° N, recorded by Verrazzano, is the legend: “From this eastern sea you may behold the western sea and there are six miles of land between them”. Few geographical errors so confused the minds of explorers and mapmakers for a century as this belief in the nearness of the western sea. This misconception appears also on the maps by Maiollo, Sebastian Münster (#381), Battista Agnes, the *Ulpus* globe (#367), the *Harleian* (#382.1), *Bailly’s* globe (#351), the *Paris Wooden* globe (#357), the single cordiform *mappamundi* of Finæus, Jacques Le Moyne, John Dee (#418), Giacomo Gastaldi (#383), *Florentine Goldsmith’s* map by Giorgio Calapoda, 1552 (#386) and John Farrer (#472).

The British Library, Sloane MS 117, ff. 1r-4r contains a manuscript world map in two hemispheres that has been dated to about 1530 and has been mentioned in the cartographic literature several times, but never properly studied. The most remarkable feature of the map shown below are the revisions in the hemisphere devoted to the New World, which, according to historian Chet Van Duzer, can be seen in multispectral images of these folios. Originally the map showed the New World as separate from Asia, but it was changed to show the New World as being connected to Asia. The map thus vividly demonstrates the difficulty Europeans faced in interpreting the new discoveries in the West, and in deciding what the relationship was between those discoveries and Asia—this confusion dates back to Christopher Columbus, of course, who thought that the lands he encountered after crossing the Atlantic were in Asia.

It has not been previously noted that the two hemispheres, prior to the revisions, were based on the inset hemispheric maps at the top of Martin Waldseemüller’s 1507 world map: not only are they visually similar to Waldseemüller’s inset maps, but some of the texts on the hemispheric maps were copied from elsewhere on the 1507 map (see #310). It seems likely that the hemispheric maps were produced in the workshop of the Swiss humanist Henricus Glareanus (1488-1563, #322.1), as their visual style is similar to that of Glareanus’s other maps, and Glareanus made multiple manuscript copies of Waldseemüller’s maps. Justin Windsor and Henry Harris had suggested that the details of the revised New World map were copied from Oronce Fine’s 1530 world map, but in fact, they were copied from Fine’s 1534 world map, as is demonstrated by some texts and place names on the map.”





Anonymous manuscript world map, 1530, Sloane MS 117, ff. 1r-4r



Oronce Fine's cordiform world map, 1548 showing an Amer-Asian continent. Indonesian islands are placed just off the Mexican coastline (#356)





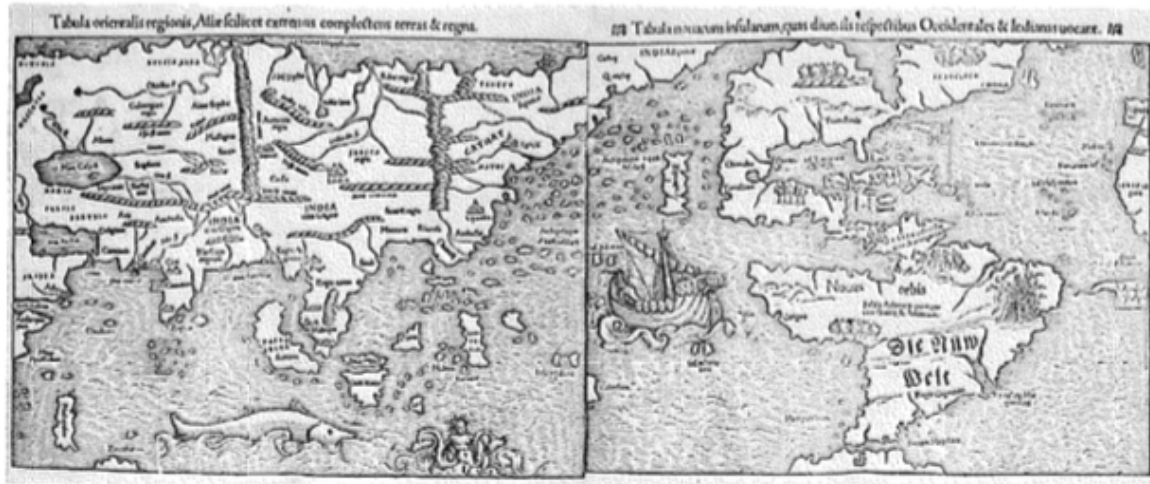
*Typus Cosmographicus Universalis*, S. Grynaeus/H. Hoblein/S. Münster, 1532,  
55 x 35.5 cm (#353)

Cartographically speaking, the map and Münster's *Declaratio* do not reflect the most recent knowledge of the day. The author of the map did not know, for example, of the first circumnavigation of the globe, as may be concluded by, among other things, the omission of the south polar continent, the discovery of which had been foretold by several earlier cosmographers, while its existence was considered to have been confirmed by Magellan in 1522. Neither is there any passage alluding to this memorable event in Münster's introduction, although he discusses the influence of the Portuguese voyages and praises the discoveries of Columbus and Vespucci. North America is shown narrow and elongated, deeply indented north of the Tropic of Cancer, and is labeled *Terra de Cuba*. This portion of the New World is positioned very close to *Zipangri* [Japan]. In the North Atlantic, far out to sea, is a deeply indented island named *Terra Cortesia* (instead of the usual *Terra Corterealis*) that represents present-day Newfoundland, also a *Lustitanian* map trait. South America is depicted as wide in the north and narrow and finger-shaped in the south. This continent bears the names *Parias*, *Cannibali*, *America Terra Nova* and *Prisilia*. In the two earliest editions (1532 and 1537) the word *ASIA* is inserted on this continent, disappearing with the 1555 Basle third edition, along the word *Typus* added to the title.

Whether North America was conceived as being contiguous with Asia or merely close to it, the result was the same regarding the islands of Marco Polo's *Indies*. Myths, legends, and half-truths about Indian islands and not just Atlantic islands continued to shape expectations and desires regarding the New World even after it became clear that the Atlantic coastline of the Americas was not the coastline along which Marco Polo had sailed. On maps that illustrated the separateness of America from Asia, like Waldseemüller's world map of 1507 (#310) or Sebastian Münster's map of the New World (1546), *Cipangu* [Japan] and the *multitudo insularum* appeared



just west of the Pacific shores of North America. The effect is particularly marked if we pair Münster's map of the New World with his map of Asia, producing a composite map of the Pacific Ocean (below). On maps that depicted the opposite, the islands remained in relatively the same place, dotting the oceanic expanse of what we call the Northern Pacific, but rubbing up against an American/Asian coastline that arched to the north of them. The effect is particularly dramatic on Giovanni Vassore's 1558 copy of the world map by Caspar Vopel (see p.72), which uses Waldseemüller's projection to contradict his geographical ideas. There, Marco Polo's *Mangi* lies just over the hills from *Hispania Nova*, and the Moluccas lie only 30° west of Mexico's western shore, Far from separating America from Asia, this map and others like it depict a geography in which, as Eviatar Zerubavel puts it, "Orient and Occident literally intermingle."



Two maps produced by Sebastian Münster, 1546, illustrating his conception of the breadth of the North Pacific (see also p. 75 and #381)



*Recens, Et Integra Orbis Descriptio . . . by Oronce Finaeus, 1534-66, 52 x 58 cm (#356)*

Finaeus presents his geography on a “true” cordiform projection, a single heart-shape with no truncation. With this perspective, evidence of another incursion into the Pacific, that of Vasco Nunez de Balboa, is more legible. It was with Balboa’s crossing of the meso-American isthmus in 1513 that America first yielded a clue to the nature of its western shores. Through the region marked *Dariena* on the map, Balboa “passed over the dangerous mountaynes toward the South sea [and] learned by report that in the prospect of those coastes there laye an Ilande aboundynge with pearles of the greatest sorte.” Having successfully crossed Panama, he beheld the Pacific lying to the south from his vantage point in the mountains of Darien. The frustrating impenetrability of the New World had been finally breached. It is not clear, however, precisely what waters Balboa believed he was gazing at. Balboa may have envisioned the world as did, for example, Waldseemüller on his map of 1507, with a “true,” if still diminutive, “Pacific” Ocean. In this view Balboa would have correctly perceived that these were the waters described by Marco Polo and that he, rather than his predecessors in the Caribbean, had finally reached the China Sea from the east. Conversely, he could have assumed that the isthmus he had crossed was part of the land-bridge which had classically rendered the Indian Ocean a closed sea, that he in effect had just pierced the right border of the world map as shown by Ptolemy, that his South Sea was



Ptolemy's *Magnus Sinus*, and that *Cattigara* therefore lay somewhere along his new coast. That is how Finaeus interpreted the events.

Finaeus believed that America and Asia were partitioned only by a gulf, in effect showing North America as *Asia Extrum Cathay* in a way analogous to earlier conceptions showing eastern Asia as being *India Extnim Ganges*. North America is partitioned from China only by a gulf similar to that which separates India from Arabia or Southeast Asia from India, with the Spice Islands squeezed into this "Amerasian" gulf. The data brought by the survivors of the Magellan voyage had failed to impress upon Finaeus the true size of the Pacific Ocean. As a result of this confusion, the recent landfalls of American explorations co-exist with the worlds and place-names lingering from Marco Polo and the medieval mind. Although the regions of Florida, *Francesca*, *Baccallear*; and *Los cortes* properly occupy the eastern seaboard of North America, in the region of present-day Texas we find *Catay*, or *Cathay* [China]. West of *Cathay*, in the vicinity of what is now the American Southwest, Finaeus plots *Tangut*, the northwestern part of China where Marco Polo encountered the escorts of Kublai Khan. To the south, *Messigo* [Mexico] and *Temistita* [Mexico City] are simply regional names in the province of *Mangi* (*Manzi*, or southern China), whose splendor Polo described as being "on such a stupendous scale that no one who hears of it without seeing it for himself can possibly credit it." *Messigo* is in fact shown to the west of *Cathay*. Desert is shown stretching across the Great Lakes region. A realm of pygmies (*Pig Mei*), probably inherited from early Norse reports of *Skrælings* in Greenland, lies just east of the desert. Off the western shores of the New World lies the Moluccan Sea (*Moluce Mare*).



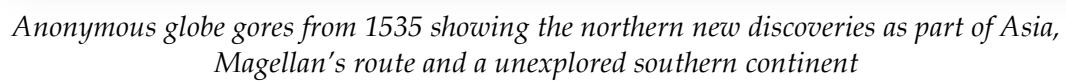
*Paris Wooden Globe, 1535, 20 cm diameter (#357)*

The connection of this globe with those belonging to the class where the New World north of New Spain blends with Asia, is shown by the names *Terra Francesca* (the present-day New England area) a name also used by Vesconte de Maiollo [Maggiolo] on his map of 1527, and *Mare Catayum* given to the Gulf of Mexico. Its most recent geographical data is *Peru Provincia*, and, within the borders of the latter, *S. Michaelis*, that is the colony which Pizarro planted in the valley of Tangarala in 1532, and to which he gave that name in acknowledgement of the miraculous assistance alleged to have been rendered to him by Saint Michael in his battles with the Indians of Puna. Since the news of the foundation of San Miguel began to circulate in Europe only in 1534, the historian Henry Harrisse ascribes to the globe the date of circa 1535.

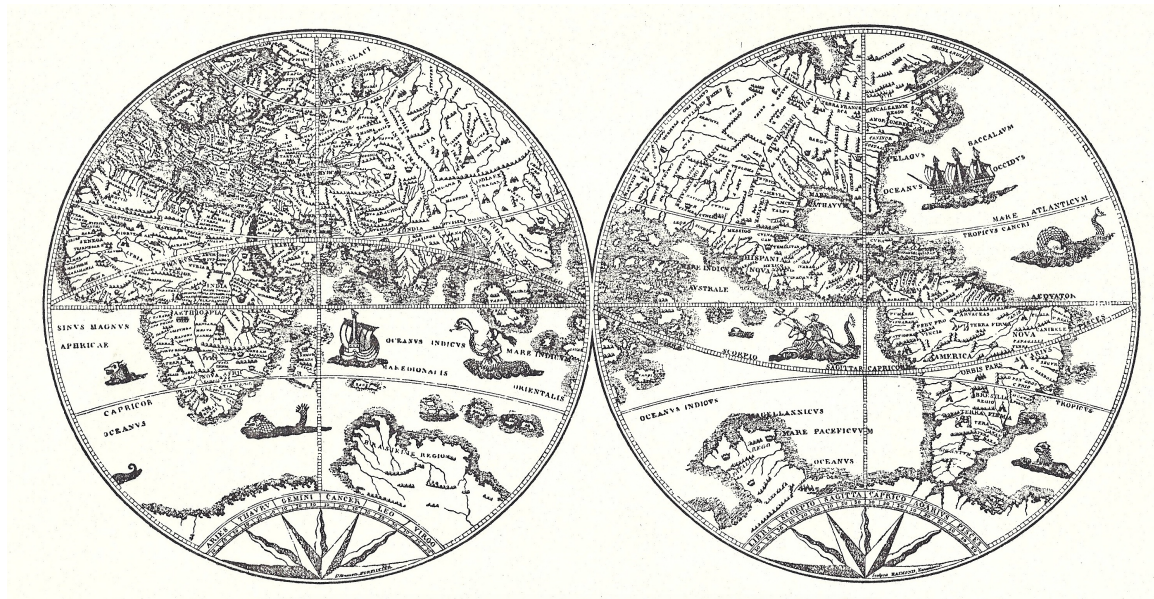




Redrawing of the Paris Wooden Globe from HARRISSE. (#357)  
Note the merging of the New World discoveries with the Old World (Asia)



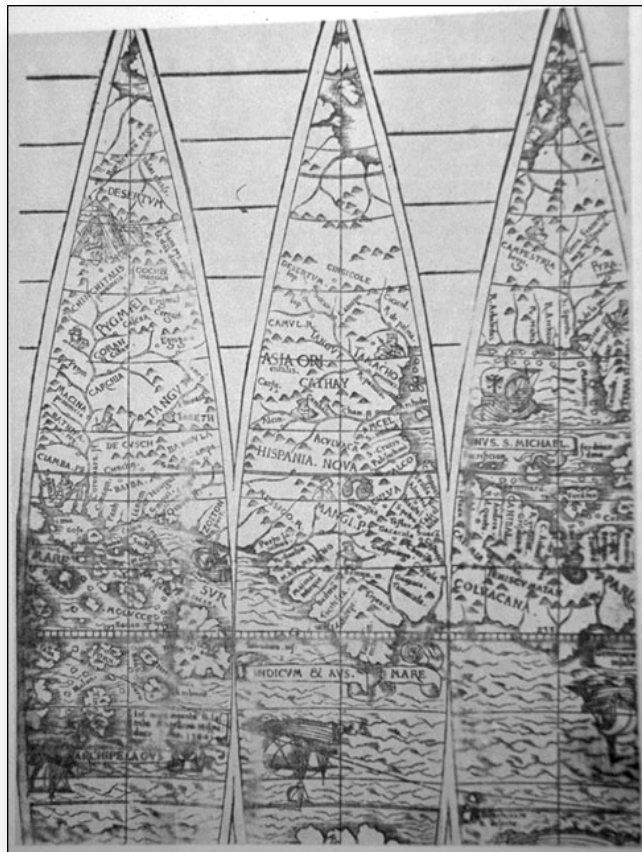




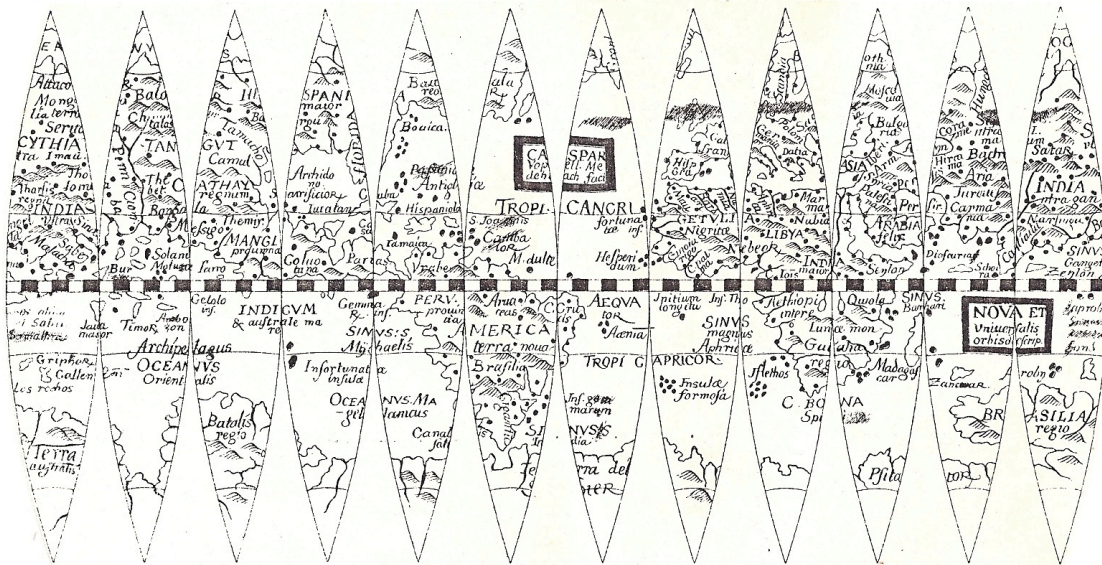
*The Nancy globe, 1530, (#363), 16 cm diameter, showing the northern new discoveries as part of Asia.*



In the *Nancy* globe there is a striking resemblance of its land configurations, and of its geographical nomenclature to that of the *Paris Gilt* globe, of the *Paris Wooden* globe, and of the world map of Orontius Finaeus of 1534. The New World is represented as a part of the Asiatic continent, and the central section of that region, to which we may refer as North America, is designated *Asia Orientalis* and *Asia Major*. To the east of these names are numerous regional names, conspicuous among which are *Terra Francesca*, *Hispania Major*, and *Terra Florida*. Mexico bears the name *Hispania Nova*, while the sea to the west is named *Mare Indicum Australe*. While the globe honors Vespucci, whose name is given to the New World, it is drawn in accordance with the Columbian idea as respects those features that are false. Northern and Central America are represented as parts of Asia, while the rivers of India empty into the Gulf of Mexico, called *Mare Cathayum*. This region, as well as the east coast of North America, fails to show the progress of exploration. Yucatan, as on many maps, appears as an island. *Terra Florida* and *Baccalearum* are therefore still in Asia. In Florida there is no indication of the exploration of Cortes, while Cartier has no recognition in *Terra Francesca*, notwithstanding his voyages of 1534 and 1542. In *Hispania Nova* the Spanish and Asiatic names are mixed together. Lower California is not indicated, yet it is clear that at the time the globe was made a great deal was known about the Pacific coast. The maker of the globe appears to have been more deeply concerned in the artistic character of this semi-religious instrument, than in its true geographical character. Hence many very interesting discoveries are neglected, though well known at the time. In conclusion, we may say the most prominent feature is found in its embodiment of the false geography of Columbus, which was relinquished with the unwillingness that attended the abandonment of the Ptolemaic system of astronomy.



Globe Gores by Caspar Vopel, 1536 (#364)



Globe gores by Caspar Vopel, 1543 (from Nordenskiöld)



Segments from the 12-sheet world map by Caspar Vopel, 1545/1558  
Here Mexico and China are portrayed as one and the same and Chinese and Mexican place-names interpenetrate one another



Inscription on Caspar Vopel's world map of 1545 (1558 copy) explaining why he joined New Spain with Asia: Some years ago, Dear Reader, when I was explaining Gaius Julius Hyginus' Poeticon Astronomicum



*Simulacrorum by calculated images, I also at that time outlined and wrote out various geographic delineations, to which the scholiasts, in part on Ptolemy, in part on Johann Werner of Nuremberg, contributed. And so, I anticipated that what Claudius Ptolemy had observed of the all the latitudes must be subject to reason for all longitudes, not only in the parallel described through Rhodes or Thule, but plainly for all. That way, I maintain, many kinds of [geographical] outlines were generated by me as known from reason, among which is the one marked out here which, when copies were made by friends it was loudly demanded of me by them, as it were daily, that it be sent to the public, and I had no reluctance to oblige them if they could obtain for me certainty regarding the Western lands. It came to pass then, that when the Divine Invincible Charles V, Emperor of the Romans and forever August, revisited Cologne that, among other things, as to whether the confines of Newfoundland, Florida, New Spain and America adjoined the*

*Oriental lands, was referred to his most distinguished Spanish experts who were gathered together in friendship, but there was none of them who could correctly pronounce on this, with the sole exception of the Emperor, to whom descriptions of the said newly discovered lands and islands were daily sent from New Spain. But then, thinking on what happened (for I intended to agree with Caesar's Majesty on the matter), His Majesty Caesar, upon investigating when mention was made of those lands, among other things gave his response that the aforesaid lands by no means appeared to be cloven apart by the sea, but were joined to the oriental lands. Further, the Spanish had made voyages again and again from Tenochtitlan the famous city of the Great Khan Emperor, otherwise known as King Montezuma, westward in search of the lands referred to, and no limit to such expanses could be found; suffice to say that he declared the land that fell to the region of Serica, which includes the people of China, was certainly found to be contained within the Spanish limits, of which convincing proof came from the Indians with whom the invincible Hernan Cortes had carried on war in New Spain. Furthermore, these arrangements will not be reached here but will be brought to light in their time in whichever place the book of Cosmography gives. Therefore, Dear Reader, what was communicated to me by Caesar's Majesty, and which I studiously communicate to you, clearly as*

*I was told, and offer on my elbow to you as an interim gift, that you will receive with approval what I accepted, for us to enjoy as first fruits until I shall have published another representative description in the shape of a human heart.*

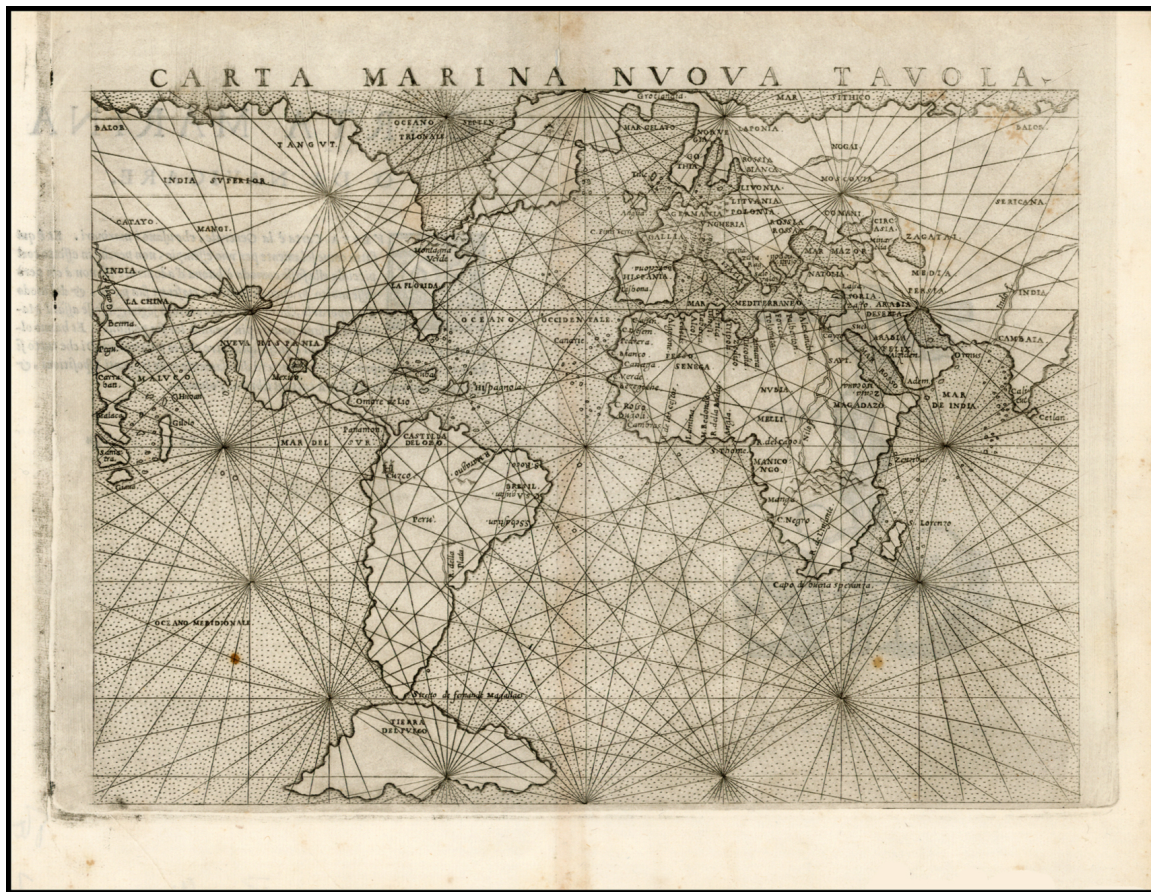


*Die Nüw Welt [The New Islands] by Sebastian Münster, 1546, 25.7 x 34.8 cm (#381)*

This Münster map was the first printed map devoted to the Western Hemisphere. Its innovative continuous through North Central and South America emphasized a definite separation of the new discoveries from Asia. The publications were so popular that together they appeared in forty editions, making them best sellers of the 16<sup>th</sup> century. As a result, this woodcut of America was more widely circulated than any map of the New World of the time. An important characteristic of Münster's map is the enormous *Sea of Verrazano* and northeasterly trend of North America. This resulted originally from Verrazano's exploration of the east coast, when he convinced himself that he was seeing the *South Sea* [Pacific] just west of the Carolina Banks. That misconception, which this map helped to perpetuate, encouraged the French and later the British to believe that a passage could be found through North America to reach the treasures of the Orient. Also, the northern Pacific Ocean is displayed as quite narrow placing *Zipangri* [Japan], *India Superior* and *Cathay* close to North America.

Magellan's first circumnavigation of the globe is celebrated by a depiction of his ship *Victoria*, the only survivor of his five-ship fleet. Münster also labeled the strait with the name of its discoverer and followed Magellan in calling Patagonia, *Land of Giants*. Even medieval Marco Polo is remembered: off the China coast is a note on Polo's archipelago of 7448 islands, and a depiction of *Zipangri* [Japan], strikingly reminiscent of Pizzigano's *Antilia*, of over a century earlier; it is positioned very close to the new discoveries. In showing North and South America as continents separate from the Old World, Münster improved upon previously published maps. On the other hand, such distinguished cartographers as Giacomo Gastaldi and the Italian School continued to link America to Asia for another twenty-five years. This charming woodcut with its geographic advances and retrogressions is one of the best-known images from the period.





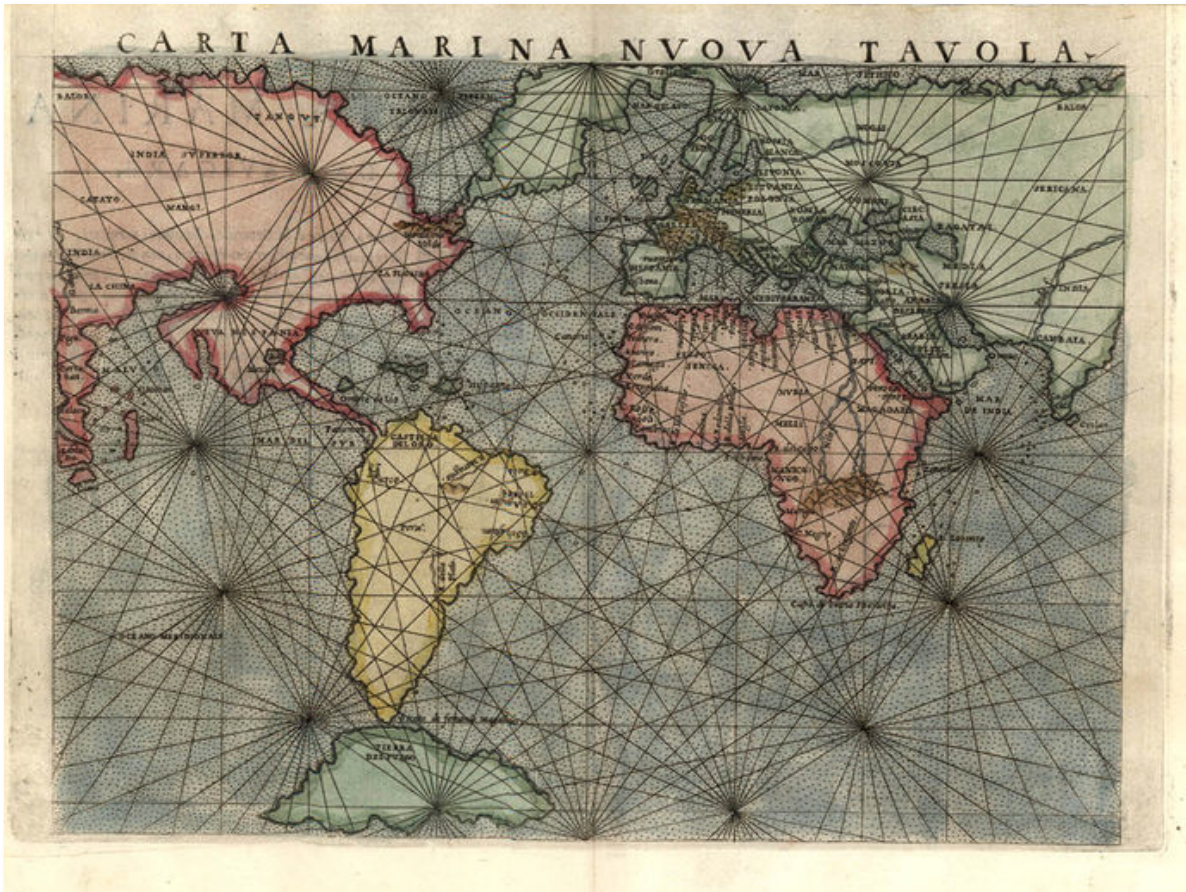
*Carta Marina Nova Tabula* [A new sea chart {of the world}], Venice, from Giacomo Gastaldi's edition of Ptolemy's *Geographia*, 1548, 13.5 x 17.5 cm (#383)

This sea chart of the world depicts the entirety of the continental northern landmasses as an unbroken ring around the globe. North America and Asia form a single mammoth continent, which in turn connects to northern Europe via Greenland. The Asia-America connection, began by Christopher Columbus, was a standard concept, and one of which Gastaldi was a particularly strong endorser (although he completely changed his position 20 years later and separated North America from Asia). This map's linking of North America and Europe is highly unusual, however, but was a natural consequence of two errors: on the east, Gastaldi depicts Greenland as an elongated east-west outgrowth of Scandinavia, a peculiar pattern used by Waldseemüller earlier in the century; on the west, he adopts the Verrazanian model for North America which had been sanctioned by Sebastian Münster in 1540 and many others before and subsequently. In combination, these two flawed elements stretched out over the North Atlantic and, quite logically, joined.

The implications of Verrazano's geography were exciting. An enterprising merchant might simply construct a vessel on the far (western) shore of the isthmus (which Verrazano believed to be as narrow as a mile in width) to conduct an easy two-stage rendezvous with China, thus finally succeeding in establishing the viable trading route to the East which Columbus and so many others had sought. At the far end of this journey, crossing the "China Sea," Gastaldi shows *Tangut*, the place in China where the messengers of the Kublai Khan had met Marco Polo. At the bottom of the isthmus, the junction between perceived Asia and perceived America, Gastaldi has marked *montagna verde*, an early reference to the Appalachian



Mountains. While the influence of Marco Polo is evident in the parts of Asia which join North America, the old Polean bonds have finally been severed in southeast Asia and the Australasian islands. A “modern,” if still inaccurate, Sumatra and Java have replaced Polo’s *Java Minor* and *Java Major*, and the “true” Singapore and Malacca Straits now appear, unnamed on the present map because of space constraints but with an early reference to Singapore (*Cinea Pura*) found on the regional map from the same atlas. On the north of the Malay Peninsula, Burma (or, for the moment, Myanmar) appears by its more modern name (*berma*). Above *berma* is an extremely early appearance in print of the term *LA CHINA* [China], with the old *Cathay* (*CATAYO R*) retained but relegated to the approximate region of Tibet.



*Carta Marina Nuova Tavola* by Girolamo Ruscelli, 1561, 18.5 x 24.0 cm (#387)

This is a slightly enlarged version of the map that appeared in Gastaldi’s edition of Ptolemy thirteen years earlier. Gastaldi’s *Carta Marina* includes the earliest obtainable depictions of the California peninsula, is the earliest obtainable copperplate world map for collectors. The only change seems to be the omissions of the names *Tierra Del Labrador* and *Tierra Del Bacalaos* from the mass of land joining North America to North Europe. The map appeared in 1562, 1564, 1574 and in Giuseppe Rosaccio’s expended edition of Girolamo Ruscelli *Geografia* in 1598 and 1599.



5.2







*Dell'Universale world map Giacomo Gastaldi/Matteo Pagano, 1550, 51.5 x 77 cm*

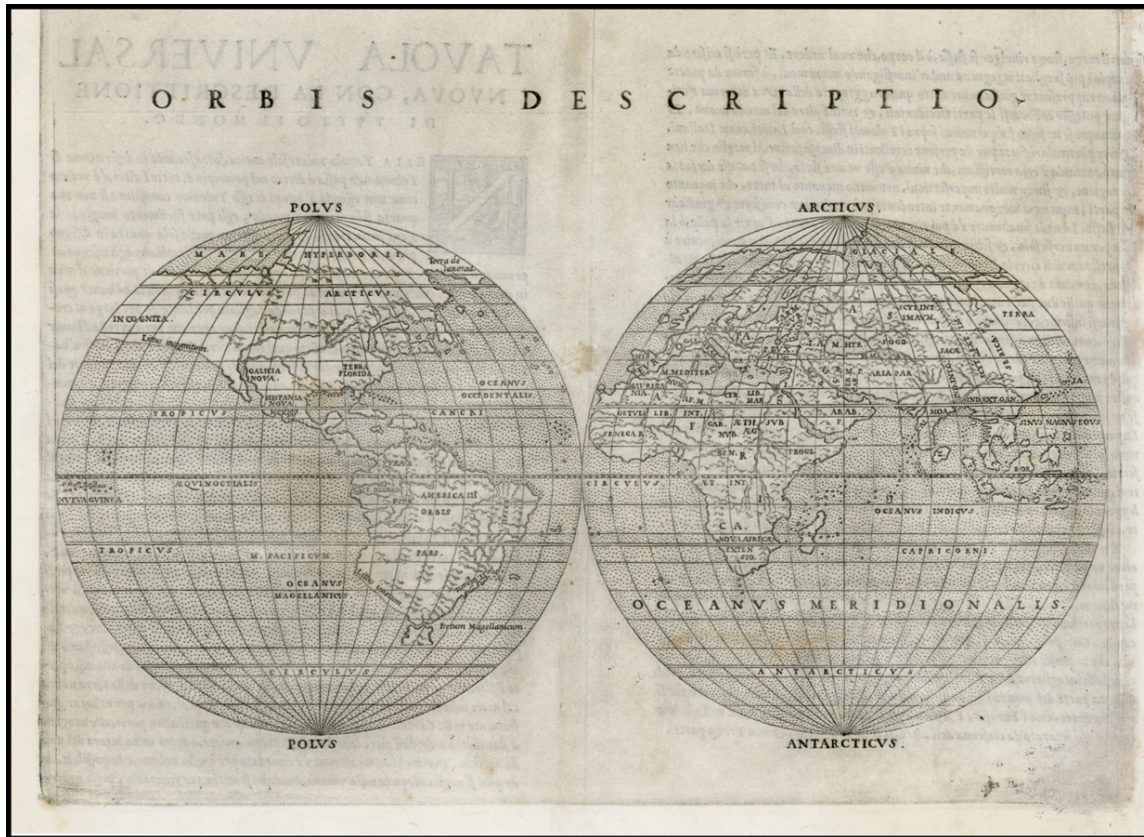


*Detail of Gastaldi/Pagano map showing the integration of North America and Asia*



According to L.C. Wroth the variation of opinion among the mapmakers about this area seems to have been concentrated in the person of Gastaldi, who at different times in a short term of years held both views of the situation. After having done a great deal in his *Universale* of 1546 to establish a belief in the theory of Asiatic continuity, and influenced many mapmakers to follow his lead, this same accomplished geographer retracted his former opinion in a pamphlet of Venice, 1562, now lost, entitled *La universale descrizione del mondo* setting up the theory that a relatively narrow body of water, which he called the *Strait of Anian*, led from the Pacific into the Arctic and separated the continents. It is a fact of interest that the basis of Gastaldi's change of belief was made up of elements in the narrative of Marco Polo.

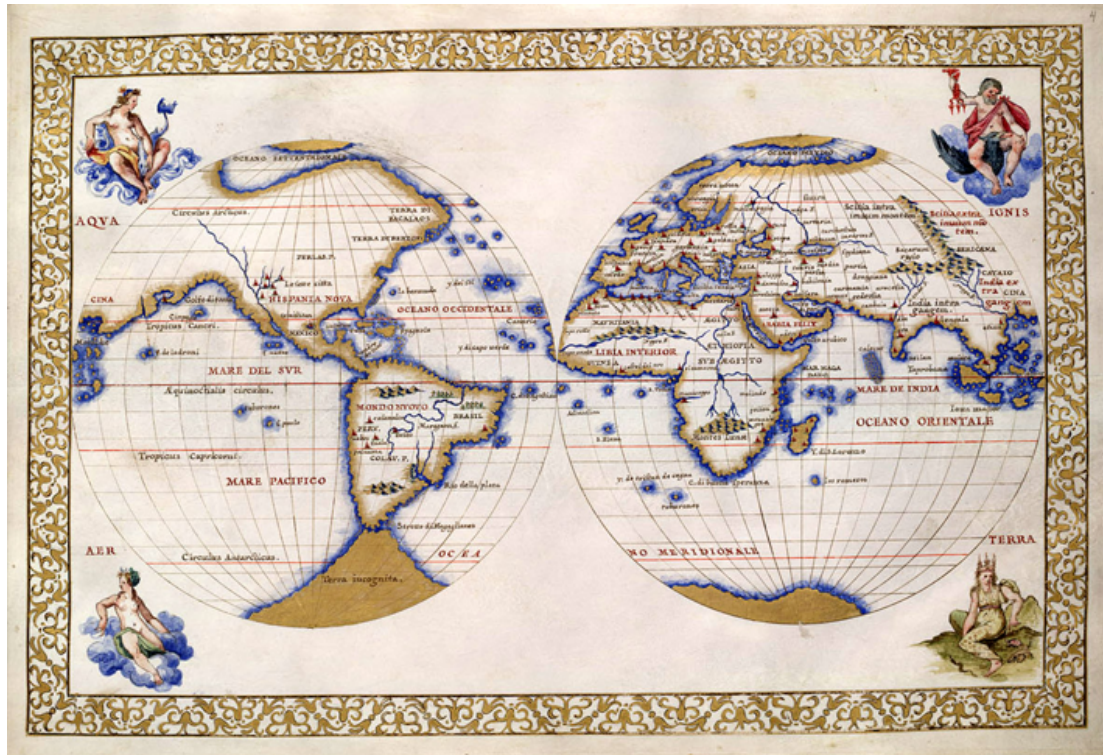
It has been thought probable that at the time of publication of his pamphlet in 1562, Gastaldi issued a map in support of the new opinion set forth in that work. An unsigned and undated production was discovered in 1921 and acclaimed by Henri Vignaud as this map of which the existence had been postulated. Authorities differ, however, not only from Vignaud but from one another as to when that map was made and who was its author. So much is this the case that the Vignaud map cannot be fully accepted as the direct expression of Gastaldi's new idea, or of simultaneous publication with his pamphlet of 1562. The Zaltieri map (#391) of Venice, 1566, remains as that which is closest in time and space to Gastaldi and the expression of his new and correct hypothesis of 1562.



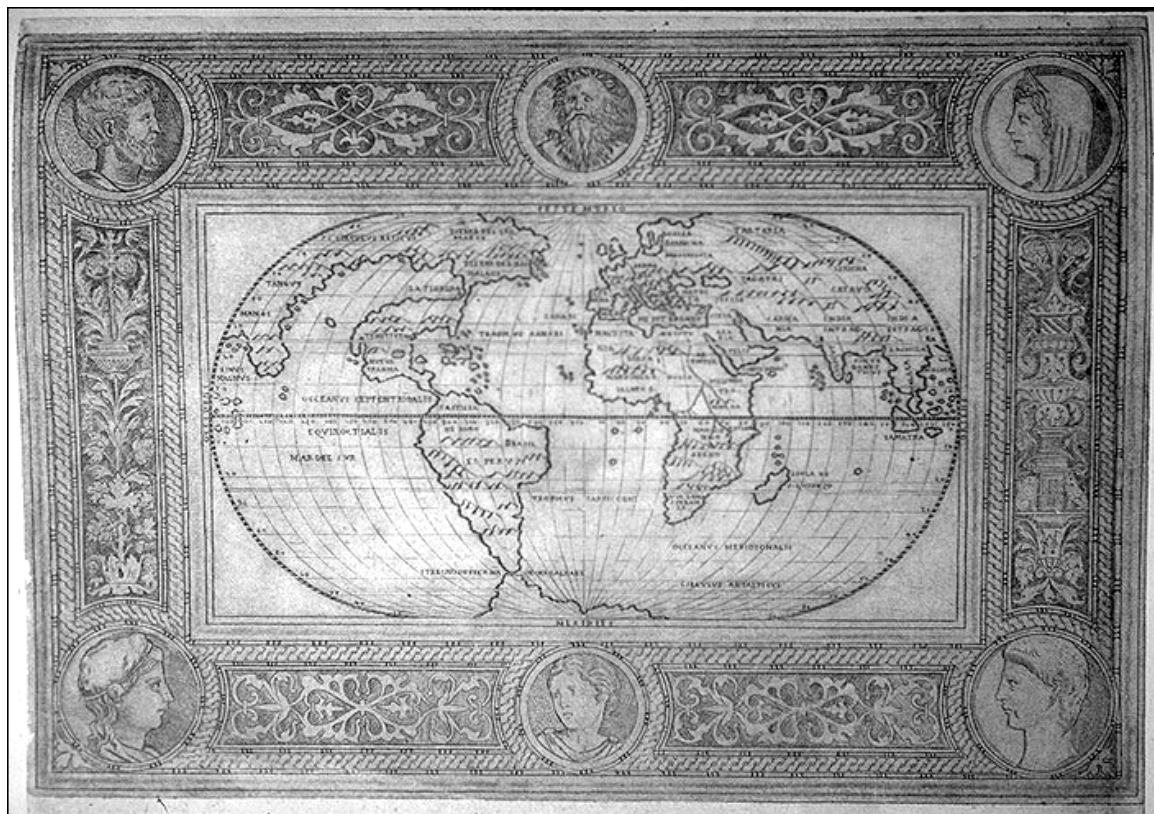
*Orbis Descriptio* by Girolamo Ruscelli, 1561, 10 x 7 inches

One of two modern world maps in Ruscelli's Atlas, based upon Gastaldi's world map of 1548. The map is a copper plate engraving by Sanuto. The map is adapted from the oval projection used in Gastaldi's larger world map and is presented on Roger Bacon's circular projection, also used by Tramezzino's large world map of 1554. No southern continent is shown. The map clearly shows the broad mass of land joining Asia and America as *Terra Incognita* and the coastline as *Littus Incongnitum*. Subsequent editions appear in the 1562, 1564 and 1574 editions of Ruscelli's work. The map also appears in the 1582 edition of Lorenzo D'Anani's *L'Universale Fabrica Del Mondo*.





Francesco Ghisolfi Portolan Atlas: World, 1550 (#384.3)



Florentine Goldsmith's map by Giorgio Calapoda, 1552, 20.5 x 29 cm (#386)

Note the Sea of Verrazano





Giorgio Sideri Calapoda world map, 1552 (#386)  
Note the Sea of Verrazano



World map by Paolo Forlani, 1562, 40 x 66 cm (#398)





*Detail of Forlani's map, very similar to Gastaldi/Pagano's and Giovanni Francesco Camocio's maps, showing the integration of North America and Asia*



1558 Niccolò Zeno [Atlas nautique manuscrit], GEEE-5610 (RES) world map  
Bibliothèque nationale de France (Paris, FR)

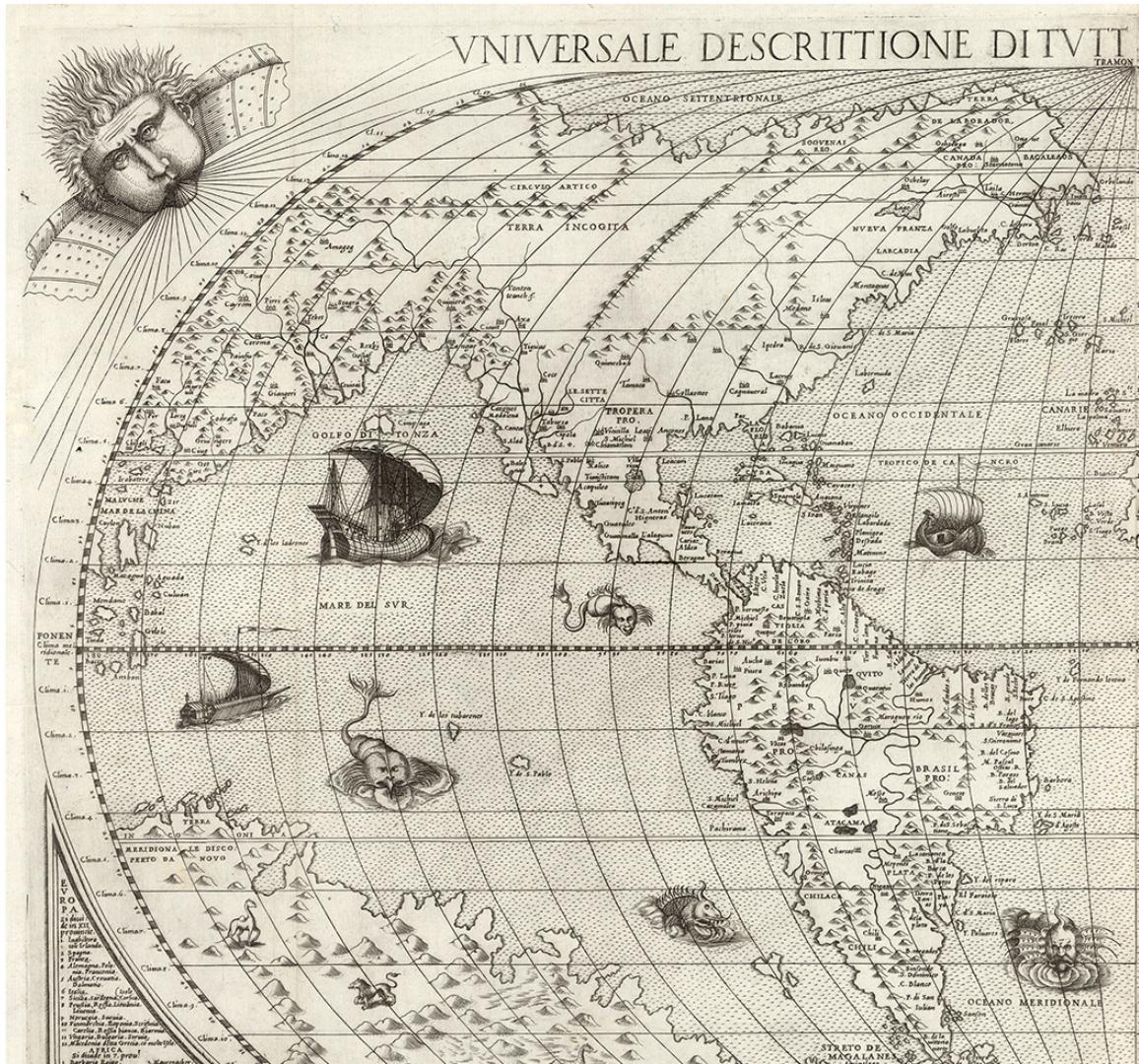


Detail: Asia connected to North America



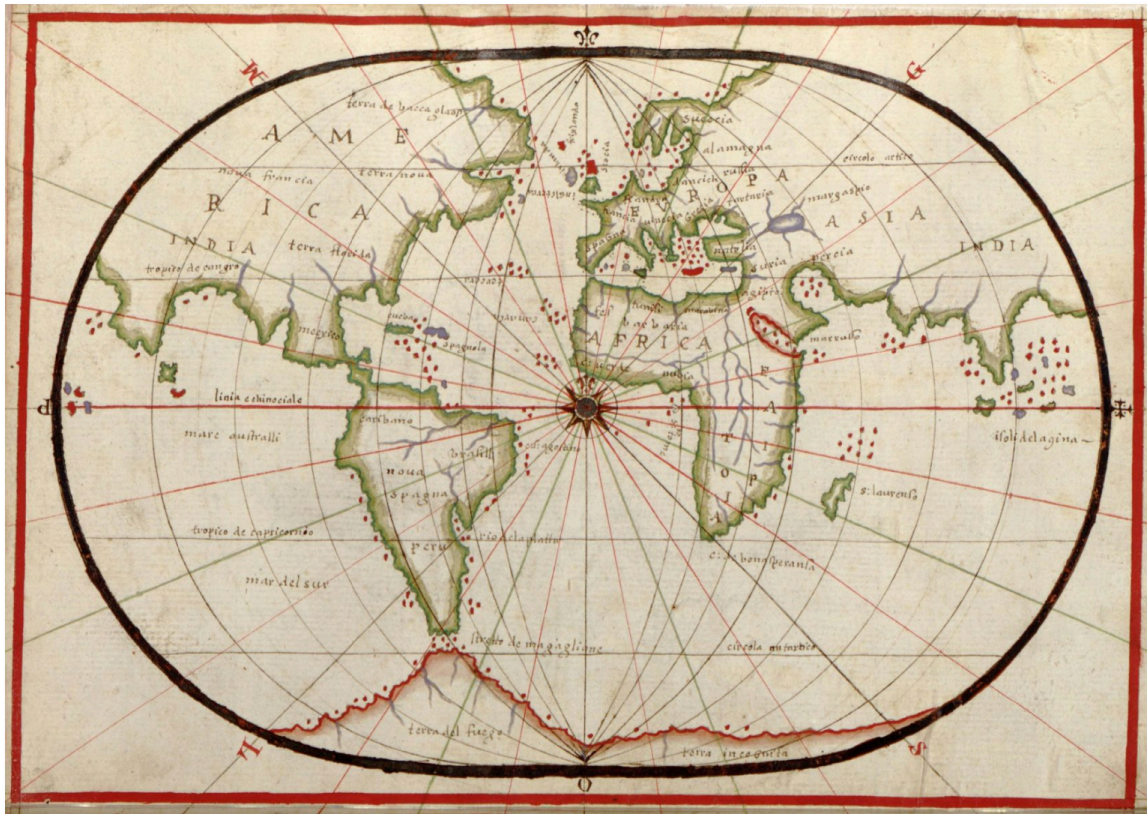
According to Zerubavel, the discovery of the Bering Strait was thus the final rupture of the symbolic umbilical cord that still connected the New World to the Old in Europe's fantasies. The mythical land bridge joining Asia and North America was only one expression of 16<sup>th</sup> century Europe's general uncertainties about the cosmographic status of the newly discovered lands beyond the Atlantic. Given the rather sketchy picture of America that was actually available to them throughout the 16<sup>th</sup> century, it was only natural that many Europeans would indeed feel somewhat uncertain about its actual cosmographic status relative to Asia. And not even those who were ready to examine honestly the new evidence coming from across the Atlantic, rather than simply deny it, were necessarily always ready to give up totally their traditional image of a tri-continental world right away.

Many of the maps made during the 16<sup>th</sup> century thus embody the various efforts by Europe to reconcile the extremes of innovation and denial in its overall response to the understandably traumatic discovery of America. Consider also the narrow strait that separates North America from Asia on most late-16<sup>th</sup> and early 17<sup>th</sup> century maps and globes. A prophetic anticipation of Bering's historic discovery 167 years later, this purely mythical strait made its cartographic debut on a 1561 world map by Gastaldi, who named it the *Strait of Anian*. Fellow Venetian cartographers Bolognino Zaltieri (1566) and Giovanni Francesco Camocio (1567) soon incorporated it into their own maps and it was not long before it appeared even on Mercator's famous 1569 world map. By the late 16<sup>th</sup> century, Gastaldi's fabled *Strait of Anian* was a common feature on almost every major European globe and world map, and it remained extremely popular throughout the early 17<sup>th</sup> century. In fact, it was featured as late as 1772 on Didier Robert de Vaugondy's map of North America, which was also included in the 1780 edition of Denis Diderot's *Encyclopidie*.



*Detail of the world map, Universale Descrittione Di Tutta la Terra Conosciuta Fin Qui, by Donato Bertelli, 1568*





World map by Joan Oliva, 1559

Since the actual geography of the North Pacific was still virtually unknown at the time these maps and globes were made, their very depictions of this purely fictional strait tell us quite a lot about Europe's deep fantasies about America during the late 16<sup>th</sup> and early 17<sup>th</sup> centuries. At the same time that its appearance seems to express Europe's basic acceptance of America's separateness from Asia, its extreme narrowness also expresses its fundamental ambivalence about this separateness. On the maps and globes featuring the mythical *Strait of Anian* the Old World and the New World are essentially portrayed as both detached from, and attached to each other—a perfect visual expression of Europeans' deep cosmographic ambivalence about their actual status relative to each other.

The same ambivalence is also evident from the way Japan is portrayed on early 16<sup>th</sup> century European maps and globes. Prior to the arrival of the Portuguese in 1542, this island was known to Europe only through second-hand rumors reported by Marco Polo from China two and a half centuries earlier, so its actual distance from America was still virtually unknown. The way in which the two are nevertheless situated relative to each other on early-16<sup>th</sup> century maps and globes therefore tells us a lot about Europe's early fantasies about America.

We have seen earlier how conservative European cartographers who basically denied the novelty of the New World often placed Japan (*Zipangu*, *Zipangri*, *Cipango*) somewhere in the Caribbean, along with the other "Indies." Thus, for example, it appears right next to Cuba on the *Contarini* (1506) world map and is virtually equated with *Hispaniola* on the *Ruysch* (1507) and *Fine* (1534) maps and with the Yucatan on the *Paris Gilt* globe (c. 1518) and Nuremberg globe gores (c.1535). Yet avant-garde cartographers also evidently assimilated Japan into their images of the New World. In fact, even Waldseemüller, the first man who unequivocally featured America as fully detached from Asia, nevertheless described Japan in his book as an island "in the Western Ocean" and portrayed it on the small inset map above his famous 1507 world map as somewhat closer to the New World than to the Old. On the large map it is portrayed on the right side of the



map, yet only ten degrees west of Central America. By the same token, Japan almost touches South America on the ca. 1510 *Lenox* globe and is situated very close to Central America on Glareanus' pre-1510 maps of the Pacific and the Northern Hemisphere as well as on Stobnicza's 1512 world map, the *Schöner* (1515 and 1520) and *Paris* (ca. 1515) globes, and the *Boulengier* (ca. 1514) and *Liechtenstein* (1518) globe gores. In fact, even Magellan's voyage across the Pacific in 1510-1511 did not immediately dispel such cosmographic visions. Thus, for example, in Pietro Coppo's and Simon Grynaeus' 1528 and 1532 maps, Japan still appears on the far left side of the map as the westernmost extension of the New World, and even Sebastian Münster in 1544 and Francois Demongenot around 1560 still place it just off the shores of Mexico.

Ever since they first heard about it from Marco Polo, Europeans had always perceived Japan as an extension of Asia. That is quite evident, for example, from Henricus Martellus' 1489 world map, which portrays it on its far right side, as well as from Martin Behaim's globe, one of whose legends describes it as the richest island "in the east". Its cartographic assimilation into the West in the early 16<sup>th</sup> century is therefore quite revealing, underscoring yet again Europe's fundamental ambivalence about the absolute separateness of the New World from Asia even after Magellan's three-month voyage across the Pacific, which clearly offered a rather definitive demonstration of its full extent.

The map of Zalterius, 1566 (#391), is of interest as being possibly the first to contain the strait between America and Asia, known for a long time to geographers as the *Strait of Anian*. The conception of a continuous connection by land between the two continents, which Columbus at first entertained, but which was afterwards discarded, was revived by Schöner (#328), and by Franciscus Monachus (#337), and was followed in a very beautiful map by the Venetian geographer, Giocomo Gastaldi (#383), just before 1550. The edition of Ptolemy for the year 1548 contains this map. Zalterius adopts the opposite theory of an ocean between Asia and America. The new *Strait of Anian* was at once accepted by geographers, Mercator, Ortelius, and many others down to the middle of the 18<sup>th</sup> century, when the voyages of Bering and Captain Cook dispelled it, and disclosed the true strait, now known as Bering Strait.



*Il disegno del Discoperto della nova Franza, ii quale s'ehauuto ultimarnente dalle novissima navigazione de' Franzesi in quel luogo . . . [The draught of the discovery of New France, made from the latest French voyages], Bolognini Zaltieri (Paolo Forlani), 1566. (#391)*

*One of the first maps to display the Strait of Anin*

Possibly Gastaldi, and not Zalterius, was the originator of the theory of the strait. It is known that the former, in 1562, discarded his old theory of the connection by land between Asia and America, and a map of his, conjecturally dated 1562, and containing the new view, may have antedated this by Zalteri.

The mythical conception seems to have arisen in an attempt in the 16<sup>th</sup> century to verify the geographical names given to places in China by Marco Polo. In his travels Polo speaks of a certain gulf, which "extends to a distance of two months' navigation along its northern shore, where it bounds the southern part of the province of *Manji*, and from thence to where it approaches the countries of *Ania*, *Tolman*, and many others already mentioned .... This gulf is so extensive and the inhabitants so numerous, that it appears like another world." Sometimes *Ania* was on the maps of the 16<sup>th</sup> century as a kingdom or province, sometimes as a strait.

The discovery of the *Strait of Anian* was claimed for a Spanish adventurer, Lorenzo Ferrer de Maldonado, who was reported to have found the passage in 1588; but his map has been shown to be an enlarged copy of this by Zalteri, and the whole account may be dismissed as a fiction. It is possible that someone before the 18<sup>th</sup> century actually found the strait now named for Bering, but nothing is known of such an achievement.

The fact that even people who were obviously committed to a non-traditionalistic cosmography nevertheless felt a need to assimilate Japan into their image of the New World demonstrates once again Europe's considerable ambivalence about its actual "novelty." Like Gastaldi's northern land bridge and the *Strait of Anian*, the visual assimilation of an island traditionally perceived as part of the Orient into the new Occident clearly underscores the fact that those in Europe who truly believed that America was indeed a New World at the same time kept toying with the idea that it might, somehow, still be attached to the Old.





*Universalis Orbis Descriptio Cogimur Tabula Pictos Ediscere Mundos, Johannes Myritius, 1590, John Carter Brown University.*

*Map of the world with North America connected to Asia. Includes quotations from Cicero. Also includes ships, sea monsters, windheads, and mermaid.*





Giacomo Gastaldi's *Cosmographia universale et exactissima*, 1569,  
below detail showing the Straits of Anian







*The Americas by Paolo Forlani, 1574 showing the Strait of Anian*



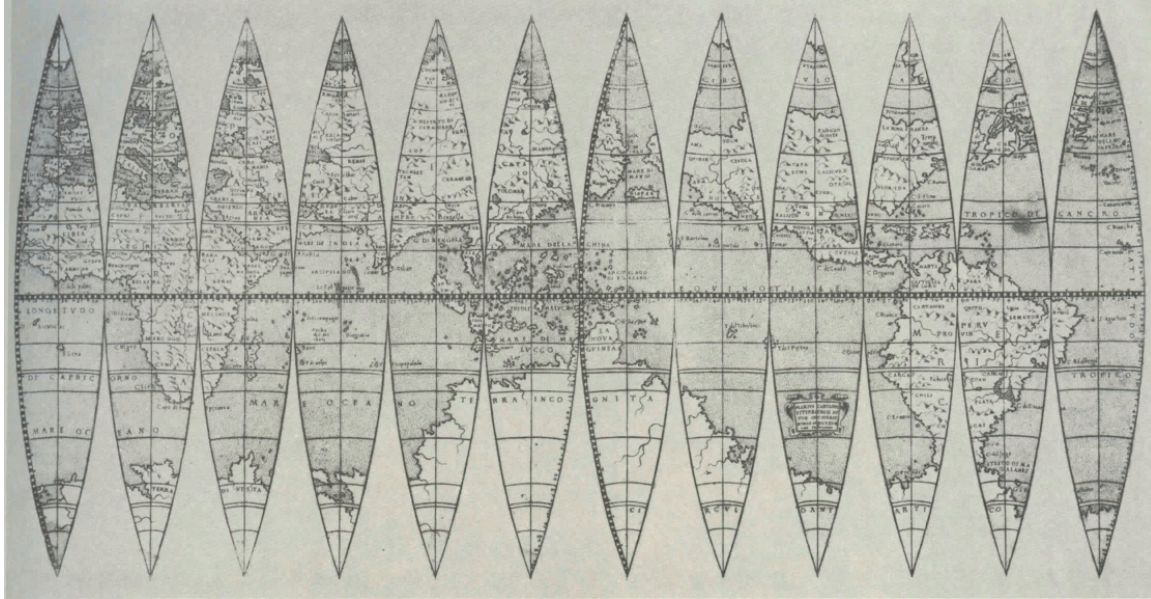


*Marius Cartarus Viterbiensis autor incidebat Romae MDLXXVII cum privilegio, a globe by Mario Cartaro, 1577, 16 cm diameter showing the Straits of Anian*

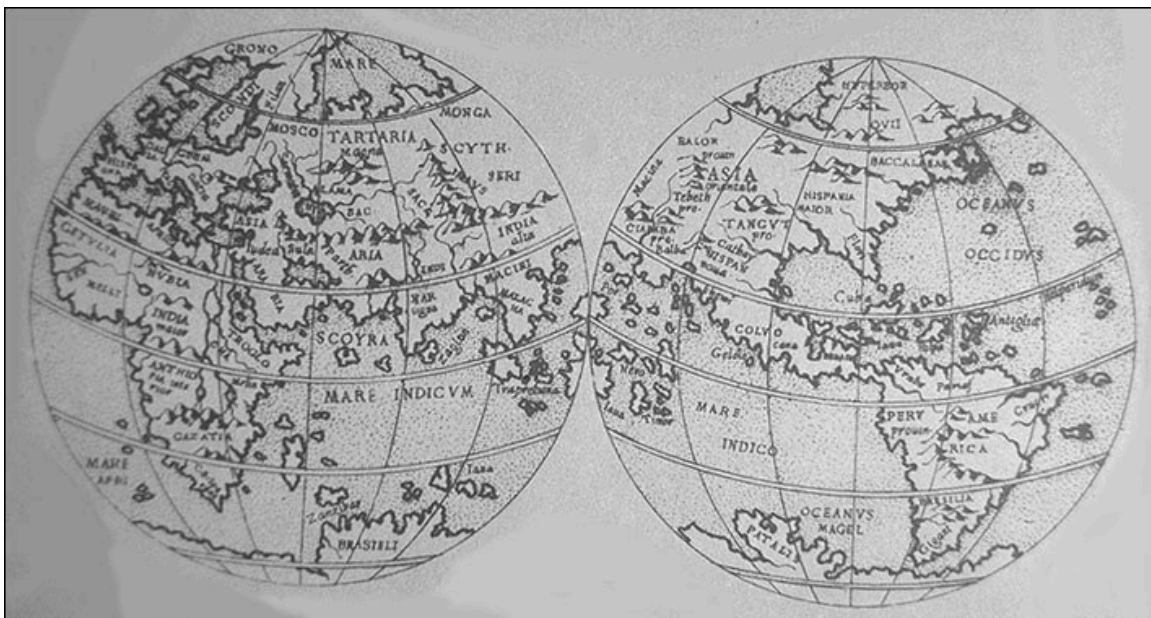
The known globes of Cartaro are all dated 1577, although he made at least two different terrestrial models. The present specimen records more advanced geographical knowledge than the other recorded Cartaro globes, following generally (though not exclusively) the Gastaldi world map of circa 1561. North America extends north to well beyond the Arctic Circle, and contains two large inland lakes. One, situated towards the southeast, is unnamed but corresponds to the *Lago Paga* in the Gastaldi map. The other is marked *Canibas*, the enigmatic *Lake Conibas* which on Cartaro's globe lies in a desert named *Zubican*. North America is separated from Asia by Gastaldi's *Strait of Anian* (unnamed) with the Asian kingdoms of *Tolman* and *Agama* situated on the American Northwest, and the Asian kingdom of *Anian* occupying the Asian Northeast, conforming to Gastaldi's interpretation of Marco Polo. Seventy years earlier Ruysch, interpreting the same text, placed *Tolman* near *Cathay* and *Tibet*, and understood *Agama* to be an island due west of *Sumatra*. The outline of the New World resembles closely that given



by Mercator and by Zaltieri. Cartaro was also an important figure in the history of Italian globe-making. In the first half of the 16<sup>th</sup> century, the only globes produced in Italy were either manuscript globes or engraved metal globes, and Cartaro's terrestrial globe of 1577 was the first dated printed globe to be made in Italy. As mentioned above, the terrestrial globe is based on Giacomo Gastaldi's xylographic world map of circa 1561, and it is thus the first dated globe to show the *Strait of Anian* separating America and Asia, and to name Canada, following Gastaldi, who first showed these features.

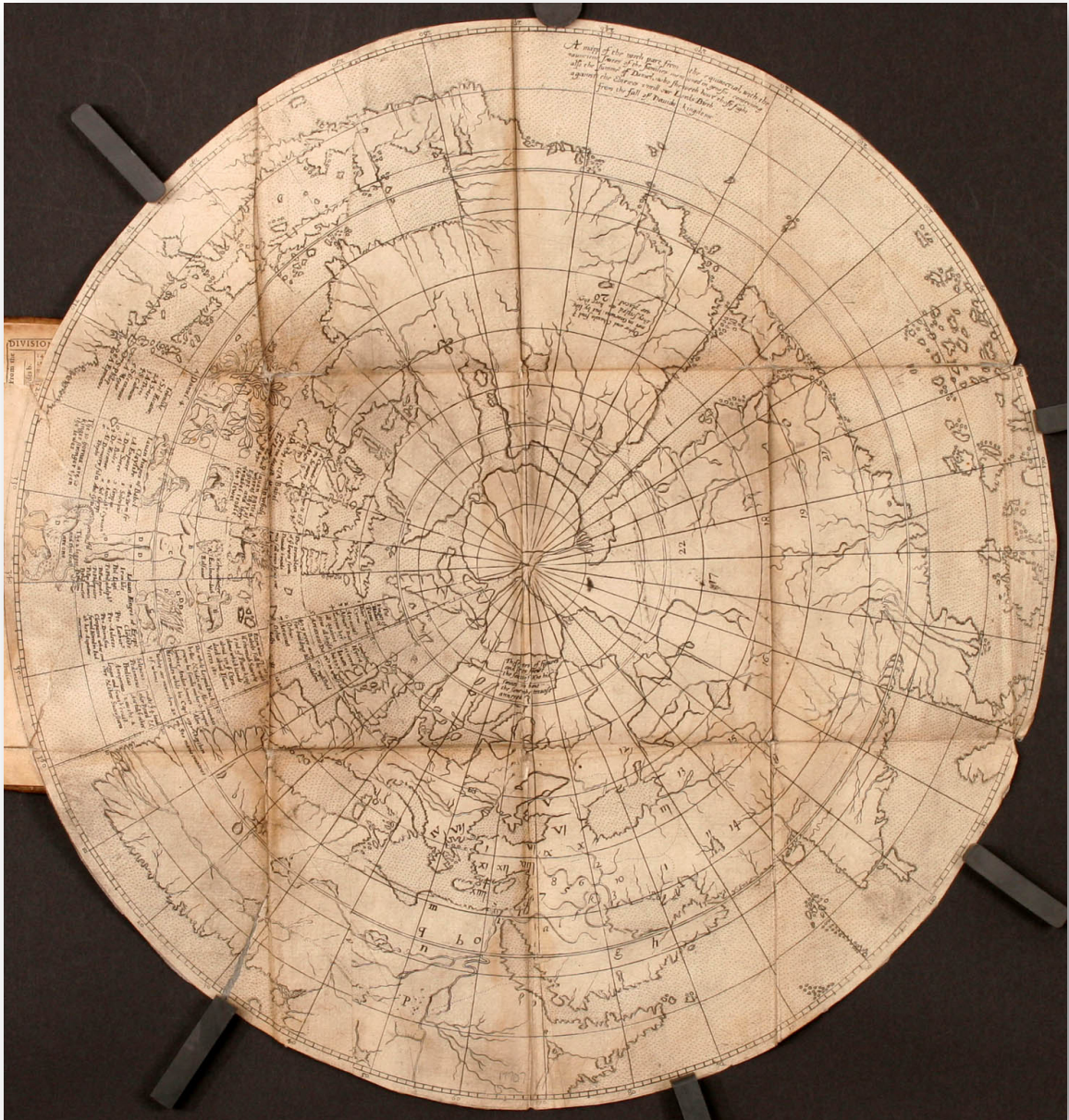


*Marius Cartarus Viterbiensis autor incidebat Romae MDLXXVII cum privilegio – globe gores by Mario Cartaro, 1577 showing the Straits of Anian*



*East/West Hemispheres by Mario Cartaro, 1579, 11.5 cm diameter, making a step backwards by showing an integrated America and Asia*





*A mapp of the north part of the equinoctial . . by Jodocus Hondius/William Rogers, 1587, 21.5 inch diameter portraying only the slightest separation of North America with Asia.*

This highly important map of the world is the earliest obtainable map on the *Postel Projection* (pre-dating Cornelius De Jode's world map) and quite probably the earliest copper engraved map of the world published in England and the first map published by Hondius.

This remarkable circular map depicts a north polar azimuthal equidistant projection extending to the equator. The *Postel Projection* is named after the French mathematician Guillaume Postel (1510-1581). The engraving of the map is traditionally attributed to William Rogers, and, if true, then the map is arguably the earliest English world map engraved on copper. However, R.W. Shirley thinks that it might have been engraved by Hondius himself, while living in London. If this is the case, then the map ranks among the earliest engraved works of the



master mapmaker. The slight Amer-Asian separation appears on the upper-right hand side, with a horizontal Japan wedged in between.



*Hemispherii Ab Aequinotiali Linea, Ad Circulu Poli Arctici... Ad Circulu Poli Atarctici... [from: Speculum Orbis Terrae...] by Cornelis de Jode, 1593, 12 3/4" x 20 1/4" (#433)*

The 1593 edition of de Jode's *Speculum* contained two world maps. The first was signed by and was drawn on a rectangular projection. The second is unsigned and one of relatively few world maps drawn as two hemispheres on north and south polar projections. This world map superbly illustrates the changing ideas of cartographers in the second half of the 16<sup>th</sup> century. In the light of new discoveries, they had to adjust their ideas about the great unknown south-land. The Portuguese voyages round the Cape of Good Hope had destroyed the concept of a solid landmass there, and Magellan had shown that there was also a passage at the western extremity. Ptolemy's continuous land-bridge between Asia and Africa in the south was abandoned in favor of a large insular Africa which would provide the necessary physical balance to the known continents - a concept which derived support from various statements of Marco Polo. Surrounding each hemisphere is an elaborate border of cherubs and clouds. An adaptation of



Guillaume Postel's 1581 world map, this map has some curious features reminiscent of the large anonymous globe gores published in Antwerp c.1587 - including an odd junction of the eastern part of Asia with one of the large arctic landmasses and the placement of Japan only a few degrees west of California.

The question as to whether a strait separated North America from Asia was of strategic, rather than just academic, importance, because the existence of such a strait would mean that a northern passage might be found to circumvent the entire continent and provide Europe easier access to Asian markets. This map has roots in both the intellectual and the political facets of the question.

As for the intellectual, Forlani depicts a narrow strait separating America and Asia as had been recently proposed by the Italian geographer Giacomo Gastaldi. Gastaldi had actually long been among the most significant proponents of the theory that North America was connected to Asia; he completely reversed that belief, however, in the last few years of his life. In a map made about 1561 and a pamphlet published in 1562 Gastaldi gave the name *Anian* to a strait that he said separated the Northwest Coast from Asia. The new strait quickly proved to be of enormous influence, becoming almost universally adopted by the end of the century. Judging from the names of both the strait and its adjoining lands, Gastaldi invented his strait from a re-interpretation of part of Marco Polo's text. Polo stated that a large gulf exists which "extends for a two-month's sail toward the north, washing the shores of Manzi on the south-east and of Aniu and Toloman besides many other provinces on the other side."

The 1561 Gastaldi world map that first showed the strait does in fact place Polo's *Tolman* in the American Northwest, demonstrating that he believed America to have been the "other side" of which Marco Polo spoke. The term *Anian* almost certainly comes from Polo's *Aniu*.

Forlani's map bears little geographic similarity to Gastaldi's, save for its inclusion of the strait, shown as a very narrow waterway due north of Japan. Below it, the seas between America and Asia are named *Golfo Chinan* [China Gulf] and *Mare de Mangi* [Sea of Manzi] after Polo, who said that "the sea in which [Japan] lies is called the China Sea, that is, the sea adjoining Manzi, because in the language of the islanders 'China' means Manzi."

On the American side of Polo's *Mare de Mangi* lie the political and practical repercussions of the strait question. In 1542, responding to disturbing rumors that the Portuguese had discovered a route between the Atlantic and Pacific Oceans in the far north, the Spanish Crown instructed Viceroy Mendoza of Mexico to dispatch, without delay, an expedition up the Northwest Coast. Mendoza assigned the Portuguese pilot Juan Rodriguez Cabrillo to the task, and Cabrillo's itinerary became the source of this map's West Coast geography. Beginning from Forlani's *Y di Cedri* (Cedros Island, discovered and named by Ulloa), the map would have Cabrillo skimming Japanese waters on his voyage north to *P. de S. Michel* (San Diego). Continuing up the coast Forlani has marked after Cabrillo's reported sighting of much smoke inland (signal fires or brush fires). North of it lies *P. de Ogni Sti*. [All Saints Point], which is probably near what is now Los Angeles. Eventually, continuing north, they sighted snowy mountains, the Sierra Nevada.

Forlani has also relied on the Spanish expedition of Coronado. Coronado departed *Nueva Galicia* [northern Mexico] in 1540 determined to reach *Cibola*, the fabled Seven Cities that had now flirtatiously retreated to the barely accessible interior of North America. Penetrating the American southwest, Coronado made his way to the Zuni village of Hawikuh, shown as *Granata* on Forlani's map. *Civola Hora* above it lies accessible to the Tontontecac River, reflecting the Spaniards' hope that the river discovered by Ulloa in the Gulf of California would provide water access to *Cibola*. The Colorado River itself (*Tigna f.*) flows from *Quivera*. In the Northeast, Cartier's second voyage is now recorded with the appearance of the St. Lawrence River and, along its banks, the village of *Ochelaga* (Montreal). Forlani, however, confuses the river *Gamas* of Gomes with the St. Lawrence of Cartier. Cartier's massive inland waterway is labeled *Gamas*, while the name of St. Lawrence (*R. S. Lorezo*) denotes a shorter river flowing south from a large inland lake. Near *La Nova Franza* the name Canada now appears, which Forlani himself had introduced six years earlier. Along the Eastern Seaboard are the now-familiar regional names *Laborador*, *Baccalos*,

Larcadia, Norumbega, and Florida. The Appalachian Mountains are shown, mis-aligned fully 90°, and the Rocky Mountains are represented in token fashion. This map by Paolo Forlani was sold without credit by Zaltieri. It is the earliest printed map devoted solely to North America, the first to portray that landmass as a separate continent and the first to show the so-called *Strait of Anian* separating America from Asia at the approximate location of the Bering Strait (in a purely coincidental instance of early geographical myth dovetailing with the discoveries of later exploration).



*Tartariae sive Magni Chami Regni Typus* by Abraham Ortelius, 1609, 35.4 x 47.6 cm



*America Septentrionalis*, 1628, by Jan Jansson and Abraham Goos showing a large landmass situated between Asia and America. Abraham Goos engraved this fascinating map for Jansson's new *Atlas Minor*, first published in 1628, and in 1661 it appears in this popular geography by Philipp Cluver. The most dominant feature of the map is the curious depiction of the west coast of North America, which is completely bisected by an unnamed straight (Northwest Passage), possibly derived from reports of Juan de Fuca's disputed voyage. The bulging northwest coast of North America continues another 65 degrees and is separated from Asia by a narrow *Fretum Anian*. These features were derived from the Van den Keere and Plancius globe of 1614 and this is the first time they appear on a map of the Americas. Previous maps had depicted the supposed Northwest Passage through the Strait of Anian. Another interesting feature includes the St. Lawrence River flowing from a small lake in the west, but no Great Lakes.





Philippe Buache's 1780 map portraying the mythical Mer de l'Ouest [Western Sea] in present-day Canada and the Strait of Anian





*A mapp of Virginia discovered to ye Falls . . . by John Farrer, 1651, 13.8" x 10.6 " (#472)*  
 Oriented with West at the top. As late as the mid-17<sup>th</sup> century explorers were still attempting to reduce the extent of North America and reach the Far East through a "short-cut" route, as shown here with "The Sea of China and the Indies" by merely traveling over the Appalachian Mountains west of Virginia.

While there were many maps produced in the early 16<sup>th</sup> century that portrayed the new discoveries as separate and distinct from the Asian continent, the following early 16<sup>th</sup> century cartographers took the risk and applied their analytical skills against the available known data to portray the new discoveries as absolutely distinct and separate from northeast Asia and their leadership exerted influence on the others:

- Nicolo Caveri world map (1502-04)
- Martin Waldseemüller\* world map (1507)
- Lenox/Jagiellonian globes (1503-07)
- Bernard Sylvanus world map (1511)
- Johannes de Stobnicza western hemisphere (1512)
- Henricus Glareanus\* world map (1513)
- Tross globe gores by Louis Boulengier (1514)
- Leonardo da Vinci globe gores (1514)
- Paris globe (ca. 1515)
- Johannes Schöner's\* globes (1515, 1520, 1523)
- Giovanni Vespucci world map (1523)
- Pietro Coppo's *De Summa Totius Orbis* (1524)
- Juan Vespucci world map (1526)
- The Paris Green (Quirini) Globe (1515-1528)

- Diego Ribero's *Carta Universal. . . Propaganda, Second Borgia edition* (1529)
- Girolamo de Verrazano world map (1529)
- Simon Grynaeus world map (1532)
- Joachim von Watten world map (1534)
- Gerardus Mercator world map (1538)
- Batista Agnese world map (1542)
- Gemma Frisius world map (1544)
- Sebastian Münster's *Die Nüw Welt [The New Islands]*, (1546)
- Michele Tramazzino world map (1554)
- Georg Hartmann globe gores (1535)
- Francois Demongenet globe gores (1552)

Pre-Columbian influences: the following writers and cartographers presented theories and concepts that led Columbus and many Europeans to envision a smaller tri-continent world.

- Roger Bacon (13<sup>th</sup> century)
- Albertus Magnus (13<sup>th</sup> century)
- Maro Polo text (14<sup>th</sup> Century)
- Claudius Ptolemy (14<sup>th</sup> century translations and maps)
- Pierre d'Ailly map and text (1410)
- Paolo Toscanelli (1470)
- Henricus Martellus maps (1489 and 1490)
- Martin Behaim globe (1492)

The following maps and globes, created under conditions of limited available information, perpetuated the tri-continent world concept for nearly 300 years after Columbus' initial 1492 voyage by creating maps and globes that overtly, explicitly displayed an integrated America and Asia:

- Alessandro Zorzi's three sketch maps (1506)
- Giovanni Matteo Contarini's world map (1506)
- Johannes Ruysch's world map (1507)
- Francesco Rosselli's marine chart of the world (1508)
- Martin Waldseemüller's Admiral's maps (1513)
- Martin Waldseemüller world map (1516)
- Franciscus Monachus, 1529
- Lopo Homem and Antonio de Holanda Atlas Miller planisphere (1519)
- Paris Gilt globe (ca. 1528)
- Nancy globe (ca. 1530)
- Oronce Fine's world map (1531)
- Johannes Schöner's\* 1533 globe
- Oronce Fine's cordiform world map (1534/1548)
- Nuremberg globe gores (ca. 1535)
- an anonymous map from ca. 1535
- Paris Wooden Globe (1535)
- Caspar Vopel's globe gores (1536/1543)
- Giacomo Gastaldi\* *Carta Marina Nova Tabula [A new sea chart {of the world}]* (1548)
- Giacomo Gastaldi/Matteo Pagano's *Dell Universale world map* (1550)
- Francesco Ghisolfi Portolan Atlas: World (1550)
- Giorgio Calapoda, *Florentine Goldsmith's map* (1555)
- Giovanni Vavassore's 1558 copy of Caspar Vopel's 1545 world map
- Haggi Ahmed's world map (1559)
- Paolo Forlani\* (1560, 1562, 1565)
- Girolamo Roscelli's *Orbis Descriptio* (1561)
- Benito Arias (1571)



- Giovanni Cimerlino's world map (1566) *copy of Oronce Fine's 1534/48 map*
- Tommaso Porcacchi world map (1572)
- Georg Braun's world map (1574)
- Mario Cartaro\* globe and globe gores (1579)
- Giacomo Franco's cordiform world map (1586) *copy of Oronce Fine's 1534/48 map*
- Matheus De Chiara, Portolan Atlas, world map (1599)

Ambiguous maps that "hedged their bets" because of the lack of concrete evidence and thus were non-committal about where the new discoveries should be placed with respect to Asia.

- Juan de la Cosa portolan world chart (1500)
- Cantino world map (1502)
- *The Kuntsmann II (a.k.a. The Four Finger) world map (1502-06)*
- Benedetto Bordone, *Isolario*, 1528
- Edward Wright's WrightMolyneux chart of the world (1599)

*\*cartographers who changed their perspective on the discovery of a fourth continent*

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## PostScript

### *Pacific Ocean set to make way for world's next supercontinent*

30 September 2022

A possible *Amasia* configuration 280 Myr into the future. Credit: Curtin University

New Curtin University-led research has found that the world's next supercontinent, *Amasia*, will most likely form when the Pacific Ocean closes in 200 to 300 million years.

Published in *National Science Review*, the research team used a supercomputer to simulate how a supercontinent forms and found that because the Earth has been cooling for billions of years, the thickness and strength of the plates under the oceans reduce with time, making it difficult for the next supercontinent to assemble by closing the "young" oceans, such as the Atlantic or Indian oceans.

Lead author Dr. Chuan Huang, from Curtin's Earth Dynamics Research Group and the School of Earth and Planetary Sciences, said the new findings were significant and provided insights into what would happen to Earth in the next 200 million years.

"Over the past 2 billion years, Earth's continents have collided together to form a supercontinent every 600 million years, known as the supercontinent cycle. This means that the current continents are due to come together again in a couple of hundred of million years' time," Dr. Huang said.

"The resulting new supercontinent has already been named *Amasia* because some believe that the Pacific Ocean will close (as opposed to the Atlantic and Indian oceans) when America collides with Asia. Australia is also expected to play a role in this important Earth event, first colliding with Asia and then connecting America and Asia once the Pacific Ocean closes.

"By simulating how the Earth's tectonic plates are expected to evolve using a supercomputer, we were able to show that in less than 300 million years' time it is likely to be the Pacific Ocean that will close, allowing for the formation of *Amasia*, debunking some previous scientific theories."

The Pacific Ocean is what is left of the *Panthalassa* super ocean that started to form 700 million years ago when the previous supercontinent started to break apart. It is the oldest ocean we have on Earth, and it started shrinking from its maximum size since the dinosaur time. It is currently shrinking in size by a few centimeters per year and its current dimension of about 10 thousand kilometers is predicted to take 200 to 300 million years to close.

Co-author John Curtin Distinguished Professor Zheng-Xiang Li, also from Curtin's School of Earth and Planetary Sciences, said that having the whole world dominated by a single continental mass would dramatically alter Earth's ecosystem and environment.

"Earth as we know it will be drastically different when *Amasia* forms. The sea level is expected to be lower, and the vast interior of the supercontinent will be very arid with high daily temperature ranges," Professor Li said.

"Currently, Earth consists of seven continents with widely different ecosystems and human cultures, so it would be fascinating to think what the world might look like in 200 to 300 million years' time."

More information: Chuan Huang et al, Will Earth's next supercontinent assemble through the closure of the Pacific Ocean?, *National Science Review* (2022).



